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MODERN ELEMENTARY SCHOOL PRACTICE

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MODERN ELEMENTARY SCHOOL PRACTICE

BY

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To

NORMAN TRIPLETT

PREFACE

In the following pages an attempt has been made to present to the common school teacher and the student of education the vital elements of modern practice in the elementary school, illustrated in such a way as to stimulate further use of the methods described. Theoretical ideals have been adapted to ordinary school work. Nothing has been advocated here which has not already had successful application and thorough trial. Every illustration is taken from classroom practice.

Emphasis has been placed upon topics which the average teacher needs to consider. Experience in supervising several thousand teachers in three different states has been the basis for conclusions as to what topics teachers need most to know about and to have illustrated.

Educational theory developed in leading American universities has been made use of. Originality is claimed only for the selection of topics and for the illustrations. The many teachers and supervisors with whom I have worked should by all means be mentioned as a chief source of information and inspiration.

Recognition for materials taken from other books or magazine articles has been given throughout the book.

George E. Freeland.

University of Washington,
Seattle, Washington.

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EDITOR'S INTRODUCTION

American education has entered the experimental period. Already various problems pertaining to the construction of curricula and to methods of organizing schools and teaching the various branches of instruction have been subjected to critical examination according to scientific procedure. A considerable body of accurate data bearing upon the values of studies and economy and efficiency in educational practice has been secured. But what we have achieved thus far has served mainly to increase our interest in the experimental investigation of every phase of our educational work. Leaders of educational thought are becoming convinced that the system of education developed by our forefathers, while perhaps well adapted to the needs of their times, is not equally well adapted to the needs of our own time. But traditional education still has many active and vigorous adherents; there are those among us who maintain that the educational policies which we of to-day have inherited from our predecessors are the product of many centuries of trial and testing and we should be exceedingly slow to make modifications either in the subjects taught or in the manner of presenting them to pupils. The problems involved have become so subtle and complex that they cannot be disposed of by mere expression of opinion, and

this is the chief reason why there is a constantly deepening belief that we must assume the attitude of the unprejudiced investigator toward every vital question that is in dispute.

In the experimental study of educational problems American investigators are following two plans which are complementary. In the first place, complex situations are resolved into their component elements, and the various factors are each subjected to experimental treatment under controlled conditions so that the student can observe and record the behavior of the phenomena he is studying. It is hoped that in due course every perplexing problem in education may thus be broken up into its factors and each brought under careful scrutiny so that its traits, force, and value may be determined. But parallel with this microscopic study of problems must run macroscopic investigation, — the investigation according to scientific method of the educational process as a whole. Investigators who are capable of such work must be constantly incorporating into a school as a unitary, living organism the results of the study of particular problems. It would not do to continue our schools according to the traditional program until investigators had studied every detail of the curriculum and methods of teaching and of organization of school systems, and then attempt to construct *de novo* a school based on the principles developed by this experimental investigation. These principles should be tested and embodied in school practice as fast as they are established by scientific inquiry. This is the

only effective way to determine whether the modifications in educational procedure suggested by experimental study are feasible and whether they work out well in practice under the usual conditions environing American schools.

The present volume comes under the macroscopic type of educational investigation. For many years Professor Freeland has served as superintendent and supervisor of schools and has had the direction of an elementary school connected with a college for the training of teachers. This school has been conducted in an experimental atmosphere. Professor Freeland has kept in close touch with educational research throughout the world and he has been given freedom to test in his demonstration schools all new and apparently sound conceptions of educational values and methods. This has given him an opportunity to determine what modifications in our traditional practice are desirable and practicable at the present time. In the following pages he has presented his conclusions regarding these matters together with the data and arguments upon which they are based.

This volume appears at a critical moment in the history of the world. Our habits of life are being profoundly modified by the war, and when peace comes again on earth we will be under the necessity of developing economical methods in all our activities. It is keenly felt, not only in America, but also in Canada, England, France, Italy and probably in Germany, that we must speed up educationally; and particularly we must avoid waste in all

school work. We must strive to make every hour of a pupil's time count effectively toward preparing him for the needs of life. We must eliminate topics which have been taught heretofore but which will not be of as much consequence in the future as other subjects which have not yet found a secure place in the course of study. We must investigate ways and means of teaching every topic in order to make it seem worth while to pupils and so that when they master it they can utilize it in solving one or another of the social, intellectual, esthetic, or industrial problems of daily life. So far as it can be done, we must arrange the work of the schoolroom in every detail so that pupils will like and not detest their tasks. Professor Freeland treats all these matters in the spirit and according to the method of the unprejudiced searcher after truth. He gives the results not only of the investigations conducted in his own schools, but he compares the conclusions he has reached with those attained by other investigators. So the parent, teacher or layman who reads this volume will gain a clear view of the most reliable thought of the times concerning the studies which should be taught in our elementary schools and the most effective way to present them. He will also see how a school should be organized and conducted so as to develop the social impulses of pupils in order that they may coöperate with one another and live together in peace and harmony.

M. V. O'Shea.

The University of Wisconsin,
August, 1918.

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CHAPTER I

THE APPLICATION OF EDUCATIONAL THEORY

Theory versus Experience

The Practical View. There should be no gap between good educational theory and successful experience. Theory which cannot be applied is useless. Even though it point to necessary reforms and contain the accumulated wisdom of a century, theory must lie dormant until it falls into the hands of someone who can apply it or illustrate it in such a way that others can use it. On the other hand, experience without theory is blind. A teacher may succeed in a way through pure intuition, but not for very long, and he is always liable to the grossest of errors. In order to achieve the highest success it is essential that a proper combination between theory and experience be made. The following cases are illustrative of a situation which the modern educational world is striving to overcome:

Illustrations of inadequacy from the side of theory:

A large number of books have been written upon educational subjects. Many of them are useless because the authors have

not taken into consideration the actual school conditions under which their theories must be applied. Some are too critical and may be classed as entirely destructive. Some are too general and make no concrete applications. Others contain theory which would injure any school that tried to apply it.

Many so-called "educators" appear to show a disdain for the practical work of the teacher. They teach their theory as a subject entirely apart from actual experience. The results they aim at are such as "the understanding of educational terms, the acquisition of the author's viewpoint, the ability to quote authors, give definitions, etc." Such training in theory will, of course, be of little practical help.

Illustrations of experience which needs a basis in theory:

There was, a few years ago, a man in the middle west who was head of a department of rural schools in a normal school. His attitude toward all educational theory was one of suspicion. He considered that everything in the preparation of a teacher was subordinate to experience, regardless of the conditions under which experience occurred. He lacked ideals and principles as well as the scientific viewpoint. He was a good illustration of a large body of teachers who are overbalanced on the side of experience.

A teacher in a large city is fairly successful because of her intuition and personality. She insists that educational theory cannot be applied. She has discovered ways of doing things which are "all her own." From experience she has found that they succeed. However, her disregard for educational theory and scientific experiments has caused her to commit many blunders. Her results are those that were desired a decade ago, but they are out of harmony with modern tendencies. Her selection of subject matter is poor. She blunders in the direction of stressing the course of study to the disadvantage of the health of the children; she does not recognize knowledge aside from the requirements for her room; she

knows nothing of socialization. The mistakes to which she is liable could be continued through several pages.

All of these illustrations are typical. They represent attitudes that are prevalent. Before we can help our schools very much we must have harmony between those who stand for theory and those who represent experience. Neither attitude, taken alone, is practical.

The Significance of the Term "Practice." Practice has come to have large significance in the professions of medicine and of law. It means theory which has been discovered and tried in successful experience. It is the aim of this book, as expressed in the title, to utilize the word "practice," with all it signifies, in a discussion of education. Experience alone cannot satisfy the demands of modern practice, and only theory which has been successfully applied can be called practice.

The Modern Tendency to Study Practice. During the last decade the tendency to study schools and to try theories under actual school conditions has been growing rapidly. A great deal of our modern theory has been formulated in the schoolroom. The successful teacher and the superintendent of to-day look upon the school not only as a workshop in which certain educational results are to be achieved, but also as a place where new ideas may be evolved and discoveries made. This has elevated the work of the teacher, for, with this viewpoint, he is no longer merely a workman with a daily routine; he is also an explorer and a discoverer.

The modern training schools in universities, teachers'

colleges, and normal schools have been working to develop practice. Usually it is found that the student who has finished his courses in the subjects he is to teach and has taken all his educational theory cannot apply in the classroom what he has learned. The training school provides the opportunity to practice under sound supervision. A desire to realize all that is best in theory is usually a dominant motive here. When the student has been properly exposed to modern practice in such a school, his experience has been worth more to him than several years at trial and error would be.

The many recent surveys of schools and school systems are another proof of the tendency to study practice. These surveys are valuable both for the suggestions of the surveyors and for the descriptions of the practices which were found most successful. McMurry's "Elementary School Standards," [1] for example, is a most valuable book because in it are incorporated descriptions of actual classroom practice with suggestions and illustrations of ways to improve it.

This Is a Period of Realization. We are now living in a period of realization. During the next decade the ordinary common school is going to participate in the fruits of the works of such educational leaders as Dewey, Hall, Judd, Cubberley, and others. There is a great call from teachers and administrators for concrete illustrations of practice which embodies the philosophy of great educational leaders and is in accord with scientific results.

[1] World Book Co.

Many schools and school systems have already been able to put into practice ideals and theories that are bound to revolutionize the work of the regular common school. Such schools as the Francis Parker, the Horace Mann, and the schools of Indianapolis, Cincinnati, Seattle, and many other large cities are doing work that should be reported in order that it may be known by teachers everywhere. Teachers often declare theories to be impractical when they have already been practiced with success in both private and public schools. It is to acquaint the teacher and the student of education with such practice that this book has been written.

The Trend of Modern Practice

Advancement Has Been Along Four Lines. The modern school is developing its practice along four special lines:

1. The development of a new methodology which works through the use of problems, projects, motives, and interests.

2. The selection of subject matter that is worthy of the time and the efforts of pupils.

3. Teaching in a way that will conserve rather than injure the health of children.

4. The realization of an individual-social balance which will adjust itself to the needs of individuals and at the same time employ the social motive and satisfy the demands of the community.

Practice in these four fields will be described in detail and illustrated concretely in the chapters which follow.

CHAPTER II

THE PROBLEM METHOD

The Relation of the Problem to Other Phases of Method

Our chief concern is not for school subjects in these days of progress; it is for children. There was a time when children were not considered, and the teacher taught arithmetic, grammar, or spelling. To-day these subjects are taught better than ever before because they are seen in their true values, — as so many different means of developing boys and girls. No teacher has the modern viewpoint unless he regards his problem as one of properly meeting and dealing with human beings rather than one of subject matter. He does not ignore the latter, but he makes it secondary to the former.

Four special means have been developed in achieving the aim stated in the preceding paragraph: the problem, the project, motive, and interest. The common points and peculiarities of these should be understood in order to use any or all of them properly.

The Problem. The problem is used to appeal to and develop the child's thought.[1] It is more important that a child learn to think than that he memorize subject mat-

[1] Thinking is used here to designate some form of organization, evaluation, and judgment on the part of the child. Concrete illustrations are given in the pages which follow.

ter. He memorizes in order to think better, but if he is not taught to think, his memory will be useless to him. Man is a thinking being and has reached his high state of existence through his thinking. We present the various subjects in the form of problems, therefore, in order to develop in the child the ability to think.

The Project. The project may be defined in relation to the problem as something which the child is interested in doing and which may involve thinking, but need not always do so. He may make a map as a project. If it involves much thinking, it may contain problems. He may wonder where sugar comes from and in solving this problem may take up several projects.

Motive. The term "motive" is applied to that part of a lesson which furnishes the child a reason for studying and reciting it. A grade card may be used to stimulate good work, but this is a type of motivation little used in the modern school. A desire for self-improvement, when properly established, furnishes a better motive. Motives may be used to make otherwise irksome tasks immediately pleasant to children. In its modern sense the term has come to embrace anything that may be used as an incentive. The only danger in such usage is found in the tendency to ignore the more fundamental purposive motives which underlie all school work and to assume that the child's endeavor means nothing to him beyond the attainment of some specific immediate goal. In all school work there should be as much immediate pleasure as it is possible to bring about; and motivation

has been a large factor in making school tasks less irksome to children. But there should also be definite reasons in the child's mind for doing his school work well even when there is no immediate motive for it. *He should learn to work for the more remote motives as well.*

Interest. The broad term " interest " has been treated in the past in a very indefinite way. To secure it the school has found it necessary to develop its specific phases. Projects are organized interests. Interests are basic in the motivation of school work. Thus motives and projects are names for specific developments in the modern use of interest. However, aside from motives and projects, there should be retained a definite school procedure based upon the interests of the children.

The Use of the Four Types. Wherever any of these four types of modern methodology have been treated, either in books or in magazine articles, there has usually been a confusion of terms. It has not been so discouraging, however, in practice as in theory. The confusion lies in the fact that these methods are inseparable in practice; it is possible to separate them only in theory. Just as soon as concrete examples are furnished, confusion enters. The teacher who uses a problem has no reason for wanting to separate it from the projects, motives, or interests of the children. He has every reason for wanting to combine it with them. The lesson may primarily be a project, yet it should be interesting and well motivated. The proper stimulation of thought should also be brought about by presenting the various

parts in problem form. We need not be alarmed, then, if we fail to keep these different features separate in practice. In the chapters which follow they have been intermingled freely. The chapter devoted to The Problem Method, or that on The Project, merely uses the problem or the project as a central theme. The illustrative material, which is taken from practice, contains a proper balance of the other phases of method. If the teacher makes suitable use of problems, projects, motives, and interests as the basis of his methodology, he need not fear if their exact division is somewhat confused in his practice. This is likely to be a good indication rather than a bad one.

It is essential that a proper balance of these four be maintained. If the school employs any one of them to excess, results are likely to be one-sided. Too much of the problem procedure may develop a distaste for thinking. The project, if used to the exclusion of all else, is likely to become artificial. Motivation is chiefly used as a means, while the overuse of interest is likely to lead to a lack of seriousness. The exact amount of each is difficult to prescribe, but if we use all of them, our practice is not likely to suffer.

Purposes, Results, and Limits of the Problem Method

Developing the Ability to Think. As we go upward through the grades, we should find children growing in power of thought and in independence in attacking and solving the problems they meet in school and in life.

Much that is purely mechanical will be enjoyed by those in the four lower grades, and this is the place for most of the rote learning necessary to accuracy in English, arithmetic, and spelling. If the child masters the little intricacies of these subjects early in the curriculum, he will be free to turn more to the thought side of life in the upper grades. However, from the very beginning, the proper stimulation of independent thinking is worth while. In the upper grades emphasis should be placed upon thought although some drill should be retained. In the lower grades drill should be the chief method, but thought work should not be entirely neglected. Under such a scheme the child in the grades is often able to develop an insight into his books and the life that is going on around him that was not expected of the graduate of the high school a decade ago.

This result is largely due to the development of the problem method. Work which was formerly a matter of assignment by the teacher, the recitation of the pupil minutely following his directions, is now left to be organized by the pupil around some central problem which is a part of his own interests and life. He is in this way encouraged to do a great deal of thinking, and his recitations and examinations are marked from the standpoint of his ability to marshal facts, which means more than merely memorizing them mechanically. This function develops, with exercise, to a degree which the school, until recently, did not seem to realize.

The *why* of events in history, *reasons* for institutions

in civics, *comparisons* of places in geography, and the *values* to himself and others of everything about him should be made a basic feature of the child's instruction. This ability to compare, evaluate, understand, and conclude is the larger mental power of which memory is only an important part.

Results of Mechanical Method Compared with Those of Thought Method. The results of the thought method become evident whenever there is opportunity to compare children who are thus trained with others who have been unfortunate enough to be trained in a school which employs the old mechanical method exclusively. At a recent summer session opportunity for such comparison was afforded by the heterogeneous enrollment of children from several schools. The backward, dependent attitude of some and the thoughtful, aggressive initiative of others were in such contrast, both in the schoolroom and on the playground, that we decided to look for the cause. With but few exceptions it was found that these traits had been developed by the methods used in their respective schools.

Some of the children seemed to depend so much upon adult guidance that they were hardly able to get into the school building without first being formed into lines, and when reciting they were dependent upon the teacher's constant leadership. They had no specific wants, purposes, or desires of their own that were in any way connected with the work of the school. A usual complaint, when asked a question which it took some thought to

answer, was, "I do not understand what you want," and a common question, after a feeble attempt, was, "Is that what you want?" The wants of the teacher were their only incentive, and to satisfy them was the sole aim in reciting. They could do very well outside the realm of independent thinking. Rules of grammar (exact book definitions), the multiplication tables, and spelling in vertical columns had been their chief mental diet, and all such work they did exceptionally well. When it came to applying these mechanics, however, they were lacking.

Dangers of Superficial Thought Methods and of Over-rationalization Admitted. When one speaks of teaching children to think many practical teachers are likely to suspect him of advocating a régime in which immature minds, without proper training, are allowed to grapple with problems and questions that are beyond them, and in which the necessary grounding in the mechanics of the common branches is ignored; the result being a product which is fairly glib at discussing in a shallow way most of the great issues of the day, but is inefficient, unstable, and incapable in every line of endeavor. Some over-enthusiastic believers in rationalization, it is admitted, have stood for a program that would bring about such results, but the school that properly employs the thought method is successful from the mechanical side as well. There is a difference, however, between the mechanics and the fundamentals in the modern school and those in the school of our fathers or in schools which still cling

to traditional methods and subject matter. This difference is found in the care that is used in determining the relative importance of different mechanical facts. The modern interpretation is that many of these facts are not fundamental to any useful accomplishment; formerly everything that fell under the heading of grammar, arithmetic, spelling, or history, was taught regardless of its use.

There is a tendency in some schools to over-rationalize the mechanics of arithmetic, for example. The effort to develop addition, subtraction, division, and multiplication through reasoning often approaches a condition which has fittingly been described as "painful." There should be some thought work to establish in the child's mind the basic arithmetical concepts. But for the most part these concepts will not be fully formed until he has become a man. There is no reason for assuming that he should fully understand everything that is taught him. All of us make use of laws and principles every day about which we know very little.

We must properly evaluate thought, else our methods will become as bad from the thought side as were those of the old school from the mechanical side. It is best in many activities not to stop to think. Rather than to attempt to explain at every step, the modern way is to connect that which is purely mechanical with some problem or interest of the learner. The drill thus becomes a means to an end and is used to supplement the child's thought.

Characteristics of the Problem

Establishes Habits of Independence. The problem should be used to exercise initiative, power of organization, and independent thinking. It teaches the pupil to use his own intellect in arriving at conclusions; the books he has read, the words of the teacher, and his experience being nothing more than valuable aids. School problems and those met with in life should be united as much as possible, so that the child will carry his thinking attitude out into the world with him.

Children Ask Intelligent Questions. One of the characteristics of a problem lesson is the intelligent questions of the children. In the old school the teacher asked all the questions, and a recitation was used to discover how well the child had mastered the subject matter of the textbook. To-day the children are doing a great deal of the questioning and the teacher must be well prepared in order to help and direct them. When this type of lesson is properly conducted, the teacher's knowledge is taxed to a much greater extent than it is when he does all the questioning and holds the discussion closely within the limits of a few pages in a text.

Teacher in Background. Another significant change which this method has brought about is noted in the rise in prominence of the part played by the class as compared with that played by the teacher. He is no longer the center, but keeps in the background as much as possible. The children are made to feel that they are doing the work and that they are responsible for its success.

The child is taught that his recitation must be satisfactory to himself and his fellows as well as to his teacher. School work conducted after this plan is bound to result in more independence on the part of the children.

Rational Memory Developed. The problem method does not neglect memory but uses it to some definite purpose. In addition to recognizing fully the value of mechanical memory it exercises and develops the rational memory. Thus, while textbook definitions are not to be memorized, the child is required to understand these definitions and give them in his own words. Following this he is given constant opportunity to apply them. The ability to relate and group facts, to remember them because they are connected with something of importance to him, is the problem's contribution to the child's memory training. After considerable training of this nature, he is able to read and remember the contents of entire books.

Longer Individual Recitations. The use of the problem furnishes opportunity for longer individual recitations. When the attention must be focused for the organization of a recitation to last several minutes, all the mental powers employed receive their full share of exercise. The results of class work in which the children merely answer the questions of the teacher, often by one word, and rarely by more than a sentence, cannot be very extensive or lasting. Opportunity must be given each child to formulate and give a good long recitation as often as the time and the needs of the class will permit.

The Problem Assignment

One of the most common uses of the problem is its use in the assignment of lessons. It establishes something specific for the child to think about and gives him exercise in selecting the materials which will best serve the ends in view. A commonly used mechanical method of assigning a lesson in geography is as follows:

"Read from pages 12 to 17 in your texts and be ready to report on what you find there."

But the problem assignment makes an appeal to the child from the standpoint of something definite that is worth attending to and about which he may gain information by reading his text.

The following problem, for example, was one given a sixth-grade class in geography:

To-day we have been studying the location of Kansas as a representative of the central states in relation to Washington as a representative of the Pacific states. (Washington being the home state, it and the Pacific group were studied first and made the basis of all comparisons.)

To-morrow we shall discuss industrial relations and trade between these two sections.

Consider the following suggestions in your work:

1. Compare the products and discover, if you can, why both sections grow some crops that are the same, while some things are grown in one section that are not grown in the other.

2. Note trade relations which might come from outside connections. As an illustration take Washington's connections with the Orient.

3. Study the railroad routes, the difficulties of transportation, freight rates (these may be obtained by the teacher, or even better by a member of the class from the local freight agent), and think of the possibilities of profit and loss from shipments both ways. Might it not be better to pay more for some of the products usually obtained from Kansas and buy nearer home?

4. Look into the manufacturing industries of each section, and see if you can find any value in trading with Kansas from this standpoint.

Please continue this problem along other lines than those suggested. You will find material in your text on pages 17–21, 96–104, and 208–210. I have on my desk several books which will furnish further information. Anyone who finds time is welcome to use them. You may also find valuable material in magazines or newspapers. In our geography collection you will find:

1. A number of post cards on which are descriptions of some Kansas cities and industries.
2. Samples of products from Kansas.
3. A catalogue of railroad and steamship folders.

In addition to these sources of information you may be able to find some one who has been to Kansas who can tell you of conditions there. If there is anyone in the class who has been through the central states or has lived there, his knowledge may be able to help us very much in the solution of our problem.[1]

Advantages in Problem Assignment. These two illustrations reveal the following advantages of the problem assignment over the page assignment:

[1] This assignment may seem burdensome for the teacher, but, after learning to handle lessons from the problem standpoint, such an assignment is no more difficult than naming so many pages.

1. The problem of industrial relations furnishes a center around which the lesson is organized.

2. Individual effort is encouraged. The pupil is given opportunity to choose various means of obtaining information and is not tied down too closely. He is even encouraged to launch out for himself and attack the problem in a new way and to search for sources of information which have not already been suggested.

3. The textbook is not too closely followed nor is it discarded. It is used to the fullest possible extent, but it is not allowed to limit the teacher or the children. This is a feature of instruction which every teacher must work out for himself. A wise use of the text, not allowing himself to be dominated by it, necessitates his constant attention and effort.

4. Opportunity for weighing values was furnished to both teacher and pupils. This is a very important feature of the thought method. The teacher must select and reject subject matter if the most valuable material is to be given to the class. The children also must be given constant opportunity to exercise their intellects in choosing objects upon which they will concentrate their energies. By learning to employ their time properly they receive good lessons in self-mastery. The ability to recognize and disregard the unimportant is necessary to success in any field.

5. Sufficient material was furnished so that the brightest child had opportunity to do his best, while the statement of the problem did not impose any standard upon

the average and slow children which would discourage them.

Results Come Slowly

Degree of Definiteness Varies. This assignment may have been made more definite, or it may have allowed even greater freedom to the children. The ability and disposition of the class must be the chief factors in determining just how specific the assignment shall be. One or two specific questions or suggestions which may cause a major or a few minor problems to be the center of the lesson may be sufficient. The following are illustrations of such suggestions in history:

1. What was the immediate cause of the Civil War? What was the general cause? Why do you think as you do?
2. Compare the North and the South at the beginning of hostilities:

a. In industries. *b.* In agriculture. *c.* In man power. *d.* In ideals.

Sometimes it is beneficial to stimulate the problem attitude by the method of stating the assignment. For example, the child may be asked to "prove" propositions. The following are illustrations from a seventh grade class:

Prove that the democratic ideas of Jefferson were a necessary and a good influence at the time he was elected President. In order to prove their values, you will, of course, need to know what they were and the conditions of government at the time.

A much less difficult assignment was furnished another seventh grade in the questions:

1. Would you have voted for Jefferson? Why?
2. What effect do you think the death of Hamilton had upon politics at the time?

You will be expected to discuss these points intelligently and to know the facts concerning them as reported in the book, as well as to give your own opinions.

In geography a teacher gave as an initial assignment on Holland the following:

Holland is a very small country, yet it is very important. Study your lesson with this in mind. You can find out why this is true in your books which tell of Holland.

It has long been the custom in leading schools to stimulate thought in reading by allowing the child to look for something in the story and to acquire his practice in reading by reporting it. Such a method may be used even in the first grade. Instead of saying, "Henry, read the next," the teacher says, "Henry, tell us what the Little Red Hen said to the Pig"; or, "Will you all look carefully and see who will be ready first to tell us what Big Jumbo said to the Camel?" Unquestionably such a procedure is upon a much higher plane than the purely mechanical "next" or "page so and so."

The teacher should understand that if a class has previously been held down to prescribed pages, he must not expect the same results as from a class that has been trained in organization and thinking. Right here lies one of the most common causes of failure. After a few

attempts without any reaction on the part of the children, the teacher often goes back to the old way. As one young teacher in our recent summer session expressed it, she had "tried the problem method and it didn't work."

Inexperienced Classes Need More Direction. A wise course to follow is to make the first assignments of this kind very definite. Page and paragraph under each reference may be given. Thought and reaction will be stimulated by asking a series of questions on each point. As the class develops independence, less specific assignments should be given. Finally the place may be reached where only the statement of the problem is necessary, and the children will have developed the initiative and ability to find the parts of their texts, references in books and magazines, and materials in school and outside which give the information they desire. Following this they evaluate the information and organize it, bringing the different facts to bear upon the problem as it exists at the time, discussing present needs and possible future developments. Perfection in this work cannot be attained in the ordinary elementary school and is often not attained in the college. However, it will be surprising to any one who has not been in close contact with the work to see how much ability of this nature an elementary school class will develop.

Teacher Must Learn to Organize and to Think. The teacher who tries the problem method for the first time must not expect to find his own work as easy as is the page

assignment. He will have to know his subject matter better, and he must be acquainted with the sources of information. He also may find it very hard to evaluate and organize, for probably his own training did not develop these abilities. Like that of the class, his ability will grow with experience. It may take years to learn to conduct a class in such manner that each child will be properly stimulated and the class be given freedom but at the same time held to suitable, definite requirements. The best the young teacher can do is to try. In any case little will be lost by breaking away from the page method.

Lack of Materials No Excuse for Using Page Methods. Lack of materials is often given as a reason for not attempting this kind of work. But whatever the local situation may be, even if the text is the only book obtainable, the problem is always adjustable, and it is better to use the one book to develop independence and initiative in finding and applying the information it contains than to read and recite it by pages. The materials used in the assignment given for illustration are obtainable in any locality. If the school has no collections or museums, a week's effort by the teacher and pupils will usually result in a very creditable beginning. By keeping a good lookout and adding constantly to what is on hand the teacher can soon have a suitable collection of railroad folders, booklets of information about various parts of the world and its industries, post cards, and sample products.

Further Illustrations in Geography

The illustrations which follow have been found valuable in certain localities. They are given only to indicate in a concrete way just how the method is applied to various types of subject matter. The problems used in any community should be related to local industries, interests, government, or other features. When it is possible, the problems should be discovered by the class, but this cannot be expected at first. A superior teacher is always on the lookout for problems. They are never lacking. As the painter discovers scenes and the writer finds stories, the real teacher discerns great lessons in what the uninitiated call commonplace.

Grade four. Home geography, including the local town or city, county, and state, should be studied in this grade. These problems are taken from the neighborhood of Greeley, Colorado.

1. The locational and industrial *relation* of city to the surrounding country.

2. The same for the city and surrounding country (home county) and the rest of the state, with a few relations to the whole United States.

3. In the study of industrial relations the sugar industry, being especially important in this place, is studied in detail. A large number of problems are solved in following it. Some of them are:

The problems that arise in planting and cultivation.
Soil, care, and obtaining labor.
Harvesting (problems involved and how they are met).
The relation between the farmer and the factory.
Not considered in all its legal details.

Making sugar.
Factory visited.
Sirup made at school.
Care of sugar.
Some of the problems met with in selling it.
The values and uses of sugar.
Value of this industry to the home locality.
People employed.
Money circulated.

4. Other industries and products are considered without going into so much detail. The amount of detail depends upon the time that is left after finishing the foregoing.

Another illustration of the problem method in home geography is that furnished by a school in a small western town. The teacher, after carefully planning the problems, took her class to the grocery store. There they came in contact with the products of the local industries and raised many questions which were given them as problems to work out for their school work, the teacher being careful to select only those problems that would lead to a wide acquaintance with the field which she already had planned to cover. The following is a sample problem:

Canned goods.

On the shelves were found but two brands, "Sunburst" and "Kaw Chief."

Where were these canned?

Why only these two?

Groceryman questioned, said it was due to the location of the wholesale houses and to the railroad connections.

Railroad lines followed, and the cities studied.

Why were these cities the center of the canning industry?

This led to the question of just what was canned.

It was found that corn was canned several hundred miles from the home town, and was also one of the chief crops of their locality.

Why was not corn canned in their home town?

And so on did this apparently insignificant problem of canned goods on the shelves of the village grocery store lead them.

Fifth grade problems. North America, the northwest and north central section under special consideration for the week. Lumbering a type industry.

A lumber yard is visited. Here the children take down in their notebooks all the different kinds of lumber, their values, and the various ways in which the lumber is cut: lath, shingles, flooring, and siding.

The problem of where the boards came from and how they were brought to this yard is projected.

Geographies and other books read, teacher questioned, and lumber dealers questioned.

After several of the lumber centers have been discovered by them, they locate them on their maps, consider approximate distances, get freight rates, look up railroad connections on their railroad folder maps.

How were these boards taken from the trees?

Lumbering in the great woods studied through pictures on post cards, reading in texts and in other books.

Transportation of lumber to mills.

How does the lumberman live? If possible a man who has been a lumberman, or some one in the community who has been in lumber camps, should be consulted. Often the children are able to prevail upon this person to come and speak to the school.

Other large problems which grow out of this and which may be taken up if time permits are:

The different kinds of mills for cutting lumber, shingles, and lath;

The protection of the forests. Bring in as much of the work and preparation of the forest ranger as appears profitable.

All of the above, it must be kept in mind, arises out of a visit to a lumber yard in the child's own neighborhood, thus connecting this vast industry and the country it covers with his own home. After such a visit he thinks, reasons, remembers, and reads, and questions everyone who can give him information. Every time he passes this lumber yard he looks upon it with new interest, and his own home town seems more a part of the great world about which he studies at school.

The Weather May Stimulate Thought. A hot day may be made the basis of thought and study that will reach to the ends of the earth. The temperature is taken during every hour of the day by a committee appointed from the class. The length of the day and the length of the night are noted. The time of year is considered. A basis for comparing these conditions with those of other parts of the world is formed.

A rainy day may be used in like manner. A committee measures the rainfall for the day. The extent of the local storm is studied. This is followed by a study of storm conditions throughout the world. The reports of rainfall for different months in various sections of the

COMPARATIVE AVERAGE TEMPERATURES

	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.
Greenwich, England.	40	38	40	42	47	53	60	63	62	57	50	43
Olympia, Wash.	41	39	40	44	49	55	59	62	63	57	50	44
Isle of Wight, England	43	41	42	43	48	53	59	62	62	59	53	48
Aberdeen, Wash.	41	40	41	44	48	53	57	60	62	58	52	45
York, England	38	38	39	41	45	50	57	60	59	55	48	43
Victoria, British Col.	41	39	40	43	47	53	57	60	60	55	50	44
Cambridge, England	38	38	39	42	46	52	58	62	61	57	49	43
Tacoma, Wash.	40	38	40	44	48	54	59	63	58	58	50	44
Plymouth, England	43	42	43	44	48	52	58	61	61	58	51	47
Toledo, Oregon	45	43	44	46	48	53	57	61	60	59	54	49
Valentia, Ireland	45	45	45	45	48	52	56	58	59	56	51	48
Bandon, Oregon	47	45	45	47	50	53	57	58	58	56	52	49
Edinburgh, Scotland	40	39	40	41	45	50	56	58	58	54	48	43
Olga, Wash.	41	39	40	43	47	53	57	59	59	55	50	44
Aberdeen, Scotland	38	38	38	40	44	48	54	57	56	53	47	42
Pt. Crescent, Wash.	38	36	37	40	45	49	53	56	56	52	47	42
Braemar, Scotland	35	34	35	36	40	46	52	54	54	49	43	38
Pt. Simpson, British Col.	37	34	35	38	42	48	53	56	57	52	47	40
Hebrides, Scotland	43	42	41	41	44	48	52	55	55	53	47	45
Tatoosh Island, Wash.	43	41	41	44	46	50	54	56	56	54	50	46
Nantes, France.	41	40	42	45	51	56	62	66	65	60	53	45
Roseburg, Oregon	42	41	43	47	51	57	61	66	66	61	54	46
Roscoff, Brittany, France	46	45	45	46	50	53	58	61	62	59	55	49
Astoria, Oregon	44	41	43	46	49	54	59	61	62	59	54	47
Paris, France	37	36	39	43	51	56	62	65	64	59	51	43
Washougal, Wash.	39	37	40	45	52	55	60	65	65	60	53	47
Helgoland, Germany	38	36	35	37	43	50	57	61	62	58	51	42
Kuper Is., British Col.	40	38	40	41	47	52	59	62	62	56	49	42
Lille, France	37	36	38	42	48	54	60	63	63	59	51	42
Nanaimo, British Col.	40	36	39	42	47	54	58	64	63	57	50	43
Brussels, Belgium	36	34	36	40	47	53	60	63	62	58	49	41
Tzouhalem, British Col.	39	35	39	42	48	53	58	63	62	56	49	44
Utrecht, Holland	36	34	36	39	46	53	60	63	62	57	48	40
Matsqui Prairie, Br. Col.	36	34	36	41	48	54	59	63	62	56	50	41
Kiel, Germany	37	34	34	37	44	52	60	63	62	56	49	40
Quamichin, British Col.	39	35	36	42	47	54	59	63	62	55	49	43
Koenigsberg, Germany	29	27	27	32	42	52	60	63	62	56	46	35
Bella Colla, British Col.	31	25	29	36	44	52	57	62	61	54	45	36
Leipzig, Germany	32	31	37	46	54	62	65	63	57	57	47	37
Linnville, N. C. (Mts.)	32	31	30	40	46	58	63	66	65	59	49	40
Karlsruhe, Germany	34	33	36	41	49	56	63	66	65	59	49	40
Stuttgart, Germany	33	33	36	41	50	56	63	66	65	59	50	40
Highlands, N. C. (Mts.)	35	34	35	42	50	58	65	67	66	60	51	42
Nuremburg, Germany	30	29	32	38	46	54	61	64	63	56	46	37
Oakland, Md. (Mts.)	29	28	26	37	46	56	64	66	65	61	48	37
Gratz, Austria	28	26	31	38	48	56	62	65	63	57	48	36
Deer Park, Md. (Mts.)	28	26	25	37	45	57	63	67	65	60	48	37
Czernowitz, Austria	26	23	25	35	47	58	65	68	67	59	48	35
Somerset, Pa. (Mts.)	28	26	26	36	46	57	65	68	67	61	49	39

Data like the above should form the basis for a rational understanding of comparative features in different parts of the world. The child should not memorize these figures but should use them in his thinking. Extremes of temperature are better than these averages.

world are studied, and the child learns the moisture conditions of his locality as compared with those of other places in his own country or even on the other side of the world.

Combine the rainfall and heat reports (not average but monthly), and the child will have a means of determining the crops that may be grown in distant places. After predicting what may be grown in a certain place, the pupils read in the text to find how near the prediction is correct. When they are mistaken, the problem of why they misjudged is a good one. Fifth and sixth grade children who have studied the farm products of one locality are quick to see that another with almost identical rainfall and temperature is likely to grow the same even though it is far distant.

Sixth grade problem. Foreign countries are to be studied. A boy who has a good stamp collection is asked to bring it to school. This projects the problem of governments different from our own, yet having direct postal relations with us. Letters may be written by the class to some of the different countries. A letter directed to the U. S. Consul asking information about his neighborhood is likely to receive a reply.

A rubber tire made at Akron, Ohio, may serve to project a problem connecting the home town through that city with South America.

Materials Must Be Selected with Care. Any thoughtful teacher will be able to find plenty of materials in his home community to connect it with almost any part of the world. There are several distinct aspects of proper

dealing with this material in order to assure success in its use. They are:

1. Materials which it will be possible to follow must be chosen.

2. Those which have the widest connection with the places or industries which the teacher has planned to consider, and those which are likely to provide greatest opportunity for thought work and individual investigation should be selected.

3. The reference material must be gathered and prepared by the teacher in order that the class need not waste time in searching for it or overlook it entirely.

4. The materials that are to be studied should be organized by the teacher at the beginning of the term, so that they will be properly related and fit into his course of study. It would be impossible to succeed in this type of work by bringing in things from the community merely because they have a connection with the rest of the world without first considering the relation of such problems to the other work of the school.

Problems in Arithmetic

Arithmetic Primarily a Mechanical Subject. Arithmetic has been very much overestimated as a thought-developing subject. It demands a specialized type of abstract association rather than thought in the modern sense of the word. The modern thinker is one who works in the world of action rather than in the abstract, and his thought employs mathematics as a means of

solving the larger problems depending upon arithmetic, geometry, calculus, or trigonometry. The study of arithmetic can aid in developing such ability only in the measure that it is brought to bear upon problems which the children find in the world about them.

Most arithmetic work should be recognized as purely mechanical. In this respect it is little different from spelling. We must insist upon children learning how to add, subtract, multiply, and divide; and the only way to learn is to practice. There is little reasoning in learning to multiply fractions or to add decimals, and only a slight difference is found between work of this type and the solution of problems in interest after the method has been explained. If the child forgets the method, he must learn it again. His success depends entirely upon his memory.

Subject Valuable but the Chief Method Is Drill. This attitude in no way minimizes the value of this subject, which provides an essential mechanical basis for business, engineering, farming, and most of the activities of civilized life. However, we will be more successful in teaching it if we recognize that the chief method should be drill; motivated, to be sure, in every possible way, but, nevertheless, drill. This necessitates a large use of problems in the four fundamentals, and in fractions, decimals, percentage, interest, and mensuration, selected so as to provide exercise in the measure that the children show a need for it. These problems may be provided by the teacher and written on the board each day,

but it will be a saving of time to select them from some good text.

Life Problems. However, in addition to this work, a large amount of exercise in concrete thinking should be provided. The child, while developing the ability to solve the artificial problems furnished by his teacher or text, should be taught to think of the application of the ability he is acquiring to the larger problems of life. If he realizes that his progress in percentage will be a direct help in the problem of saving money; that his ability to solve problems in interest may be used in advising his parents whether or not to buy a piano on the installment plan; and that the construction of his own home or the new house that is being built around the corner involves the constant use of mensuration, he is likely to associate his school arithmetic with his everyday thoughts.

From the third grade up arithmetic should be used in connection with actual life problems in addition to those taken from books. In the lower grades one period each week can profitably be given to the development and solution of problems of the local community in which the use of arithmetic plays a part, while in the upper grades a larger amount of time may be given, depending upon the extent to which the children react to the plan and the local problems that are available. This work, when carefully planned, brings new interest into the arithmetic class, and if persisted in throughout the school course will develop the habit of intelligently applying arithmetic.

Arithmetic Not Used Enough in Everyday Life. It is remarkable how many persons there are who have been well trained in mathematics in school but who never use it in life. They trust the clerks to make correct change for them; the bank keeps track of their balances; the merchant is implicitly trusted to give them their correct accounts; interest on installment purchases is forgotten or disregarded until it is due; the plumber, the plasterer, or the painter works for them and sends in a bill. They pay it without knowing whether or not the charge is just. A mild sensation was caused when one of our boys discovered in his concrete arithmetic work that his family was paying for a house on the installment plan under a contract which did not furnish them with the means of calculating the amount of interest payable before the property would be turned over. A girl of thirteen discovered that her father had been paying eight per cent interest for six years thinking all the time that he was paying seven. A boy whose parents were building a new house figured the cost of the plumbing supplies and found that the only company they had consulted was charging $185 to put in materials which he could purchase for $42. Concluding that this was too much he obtained bids from several other companies. He learned a life lesson when he discovered that no two of them were the same and that a reputable concern would do the same work for $110. These are type incidents of common experiences in a school in which life problems are made a regular part of the work.

Life Problems Supplement Regular Work. It is a mistake to try to confine all the arithmetic to life problems. Although these furnish some drill, they cannot be provided so as to furnish sufficient exercise to the class unless we make them as artificial as those in textbooks. More is gained by staying with the regular arithmetic, within functional limits of course, and doing this better by associating it with life. The purpose of life problems is to develop the habit of using arithmetic in connection with the larger concrete problems of life. As pointed out in the preceding paragraph, many of these have a large mathematical element but are not properly met by the majority of people because they are loath to use even the mathematics they have been taught in school. The safest method is to use life problems as often as children will bring them in. This will depend upon the method the teacher employs in presenting the plan.

Illustrations of life problems involving a use of arithmetic.

Problem: How may I learn to save and also help my parents to save?

1. I may start a bank account. (Every school should have its penny savings bank, which is merely a system of receiving money at school and depositing it in a local bank. Any banker will be glad to arrange for such a scheme. The city of Toledo reports that the sum of $25,000 is deposited annually in its public school savings accounts, carried on in connection with applied arithmetic.) [1]

[1] Under the stimulus of the War, Thrift Stamps were sold at school in most communities. We should continue something along this line.

2. I may add the monthly bills. (These may be brought to school and the children be allowed to compare monthly expenditures. There is danger here of invading the privacy of the home, and this must not be urged too much. The incorporation into the school work of the monthly bills, if continued throughout the year, has been found to please the majority of parents. The average father appreciates any interest his children may take in the family expenditures. The tact of the teacher has a great deal to do with the results.)

3. I may keep books of my own expenses, so that I will know at the end of the year where my money has gone.

4. I should make myself as profitable to my family as I can, and, at least, not become a burden.

a. By helping at home with chores and work.

Problems Involved: A man's work is worth 35 cents per hour. (The children should discover this by finding out what men in the community are paid for their work.) A boy's work should be worth 15 cents per hour. Every hour I work I am saving 15 cents for my family. (This may be continued until the child has calculated and discussed saving in relation to the cost of his shoes, cap, stockings, etc.)

Other large problems, some of which afford even greater opportunities for applied arithmetic than the one given above, are:

The construction of a building (covering everything in practical mensuration).

Problems in construction and cost of the cement walk in front of child's home. Should be taken up when the children are able to see a cement walk under construction.

Does it pay to keep an automobile? How much per month and per mile does it cost the family to own the machine?

A live boy or girl may take great delight in reporting at regular intervals on this problem.

Renting or buying a garage.

Value of the home garden.

Profit and loss in chickens, rabbits, etc. (Should not be undertaken unless these are kept track of for a full year.)

Cost of pets.

Problem of the best expenditure of a certain amount of money at Christmas.

Home Economics problems:

Shall we buy or bake bread?

Cost of parties, various menus, etc.

Problems Must Come from Lives of Children. All of the above problems are valuable to the extent that they are taken up by the children in connection with everyday life. Inferences drawn from them are likely to persist through life. Thus they should be followed to reliable results before any conclusions are formed. This work is not designed to train children in the peculiar arithmetic of different vocations, and must not be put in the same class with the varying types of vocational arithmetic made up of artificial problems. Life problems must come from the children, and the teacher should never do more than suggest. Those of the class who do not care to take up life problems may be well supplied with regular textbook work If properly managed, however, the life-work day will be eagerly looked forward to by the entire class.

Community Problems. In addition to life problems (those taken from the lives of the individuals in the class)

many schools are supplementing the regular arithmetic with community problems. In relating arithmetic to the industries of the community, we are using it to form a rational attitude toward, and a better understanding of, the local problems the child constantly meets, and to whose existence he is usually oblivious.

The city of Indianapolis prints a 58-page booklet of these problems. In the introduction it is maintained that

> "A rational presentation of the processes and principles of arithmetic can be secured as well through material representing real conditions as through material representing artificial conditions."

The problems are taken from lumber yards, buildings under construction, a brush and broom factory, gas plant, bakery, a canning factory, veneer works, a dairy and milk depot, fire department, city market, city hospital, taxation in the city of Indianapolis, government of Woodruff Place, a branch of the city library, cement walks and street improvement, construction of boulevards, railway passenger service, transportation, insurance, and the stock market. Although they furnish more or less drill they are not given primarily for this purpose. Their chief value is civic. From dealing with problems which are daily met by his townspeople, the child will get a more sympathetic attitude toward and a constructive interest in what they are doing. Problems are based upon accurate data, and inferences drawn from the results obtained may be relied upon.

Problems in History

History and civics are well adapted to the problem method. Memory work in these subjects has now become incidental. Wide acquaintance and insight on the part of the children is the modern aim in teaching them. Dates are remembered because they are tied up with issues of importance, and the time element may be entirely disregarded unless it is a factor in bringing about events. Information is not neglected in teaching history or civics by the thought method; their facts are unified and given purpose and direction.

The method here is much the same as in geography. The present is used as a basis of comparison. Children are taught to compare constantly the problems of their ancestors with those we are meeting to-day. Thus, the Colonial period may be studied under the large problem of adjustment to the New World. Thought must be constantly exercised in grappling with the problems which confronted the colonists. The following problems furnish a basis for a complete problem study of this period. They furnish central and connecting themes in studying the many apparently unrelated events:

1. Adjustment to new geographical conditions.
   (*a*) Climatic, (*b*) agricultural, (*c*) natural surroundings.
2. Getting along with the Indians.
   (*a*) Differences between the two peoples in (1) mode of living, (2) beliefs and customs, (3) temperament, (4) methods of warfare.

3. The problem of government.
(Covers a large field and contains many smaller problems.)
4. Religious problems.
(Different beliefs, toleration, persecution, power of minister, etc.)

A complete development of these four problems will bring the children into contact with a great deal more history than could be taught by following a textbook. In learning to look upon the facts of history as factors in the solution of problems, they lay the foundation for the interpretation of all the history which follows. As soon as a child has learned to think in terms of history all its difficulties disappear. For example, let anyone take up the Missouri Compromise and try to learn its terms in an unrelated way; then let him try to learn them as related to the problem of slavery and the conditions which existed at the time. By the first method the task is practically impossible, especially if these terms are to be retained for very long. Using the second method, if the conditions are properly grouped, one may be able to predict many of the terms, and, once having followed the remedies proposed to meet the problem with which Congress was dealing, the difficulty of memorizing becomes insignificant.

Problems in Home Economics

This subject, so often taught in a purely mechanical fashion, readily lends itself to the thought method. To bring greater efficiency into the home it is necessary to

develop a thinking attitude toward home problems. Mechanical efficiency is good enough on the part of servants, but those who manage homes need to be able to organize.

In making plans for the year the teacher should first consider the living conditions in the homes of the girls who are going to take the course. Too much planning is usually done upon the mechanical side without reference to this more important feature. Granting that certain mechanical principles are furnished by a skirt, others by a middy blouse, and still others by undergarments, it is still not profitable to practice them in an unrelated way.

The following problems furnished material for a year's work to a seventh-grade class:

As a girl in the seventh grade I have many home interests and duties. I should acquire some definite abilities to be more helpful and valuable as a part of my home life.

1. What should I learn about the home in order to make myself more useful?

a. I may make some of my own clothes.

b. I may help in mending clothes.

c. I may help to beautify the home and make decorations for it.

d. I may help to save:

By learning how to buy.

By making proper use of materials purchased.

By conservation.

e. I may help to keep the home clean and sanitary.

Problem *a* further developed.

In making my own clothes what is the best garment I could attempt at this time? It should be useful, and yet simple enough for me to make without unnecessary destruction of materials.

Discussion follows. Here the teacher is afforded opportunity to explain why the girls should not attempt to make different garments which may be mentioned. Meeting this problem now will save no end of trouble and dissatisfaction later on. The girls will also be interested in the explanations of the teacher and give thoughtful attention because they have a definite need for knowing what the teacher is telling them. This furnishes a motive for "theory lessons."

Apron selected as the first problem.

Sub-problems:

What materials? Motive furnished for as wide a study of materials as the teacher wants to introduce here.

Use of sewing machine. The child gives better attention and learns more quickly how to use the machine when the explanation of it is a part of a piece of work that is to follow. As much is mastered in one lesson of this kind as can be done in a week when the sewing machine is taken up unrelated to the plans of the children and preliminary to anything definite in the way of its use.

I must keep the machine in good condition so as not to lose time in my work. Directions as to care of machine.

Design of apron. As wide a study as seems profitable.

Decoration. As much individuality as possible.

Throughout the entire course each new step is developed in relation to the children's realization of their need for doing just what is planned in connection with the different large problems *a*, *b*, *c*, *d*, and *e*. A happy

zest for the work is a result, and the school tasks will develop a more thoughtful attitude toward the problems of the home as well as being definitely helpful in solving some of them.

Illustration of Mechanical Method Which Failed. The mechanical method so often employed by teachers of home economics causes the girls to dislike sewing and cooking, or to conclude that such work at school has no connection with the tasks of the home. The following shows how one teacher failed in her work although she took up the same materials used in the above illustration.

Preparatory work:

1. *Thread*, a study of the different colors, sizes, and thread materials.
2. *Stitches*, study of and practice in making different kinds.
3. *Seams*, study and practice.
4. *The sewing machine;* a study of its different parts. Preliminary practice on the machine until an ability to handle it was fairly well developed. Drawings made of parts of the machine.

First task: make an apron.

Materials: selected by the teacher without discussion.

Design: furnished by teacher.

(The fundamental idea being that children should not be permitted to take part in choosing what they are to do, they being too "immature." Materials and designs should be taken up in special courses and not be brought into a course in sewing.)

In a few weeks the children were disgusted with the work, and the task of disciplining them was almost impossible. By the end of the fifth week the majority had brought notes from their parents giving various reasons why they should withdraw from the course.

Problems and Topics

One often hears the question, "What is the essential difference between the problem method and the topic method?" The answer is this: the problem furnishes more opportunity for thinking on the part of the children. A topic may be developed as a problem, but it is not always so treated. A child may recite on a topic in somewhat the same way he does on a page. Needles, thread, and sewing machines were very uninteresting when considered as topics in the home economics work described on the foregoing page, but as parts of a problem which the children desired to solve they furnished vital aids and were considered worth knowing about.

The best method of answering this question is to treat one subject from the two standpoints. This may be done as follows:

Roads. Treated topically as a lesson in civics.

1. Number of miles of roads in home county.
2. Names and general direction of chief roads.
3. Taxes levied to support roads.
4. Road laws for drivers.
5. Number of miles of paved roads in home county.
6. A description of the different materials used in paving.
7. The number of bridges in the home county.

8. The duties of the road overseer.

9. Description of methods and machinery used in improving roads.

Roads. Treated as a problem in civics.

1. Why do we have roads? Is there any advantage to the members of this class in having roads?

Besides the fact that roads make it possible to travel, the children try to find:

Relation of roads to the price of farm products.

Their relation to the cultivation of farms in distant places.

The relation of their condition to:

Delivery of U. S. mail.

The doctor and his patients, (being a factor in the successful treatment of disease).

The passage of tourists through the local county (bringing in the value of tourist travel).

The consolidation of schools.

Other similar topics.

2. How may we improve our roads?

Study of roads already in existence in order to determine how well they meet the demands outlined and studied under point 1.

Do we need any more trans-state or continental roads?

In this connection note roads in existence and study what large highways go through the state but not through the home county.

What soil and drainage conditions have to be met in improving the roads?

Study of bad roads and especially bad places near the city, with a consideration of means of improving them.

Are the taxes levied sufficient to maintain the roads as they should be maintained?

Study of the taxes of the county. Question officers in charge of roads on this point.

How should we go about increasing taxes?

We must be careful not to be unjust.

We must not overburden the people with taxes.

In this connection, what other taxes are they paying?

The problem may be continued until all the nine divisions of the topic have been included.

In the problem development we see a marshaling of facts and topics in such a way as to produce conclusions and constant thinking, not only as the problem progresses but even after it has been completed. In addition, there is now a constant relation between topics which were comparatively isolated under the topic method. One may say that topics need not be thus isolated, and the answer is, " Certainly not; we should organize them into parts of a problem." In the measure that topics are organized, related, and brought into the child's individual life, they approach problems.

CHAPTER III

THE PROJECT

Characteristics, Uses, and Values

Problem and Project. As explained before, the project is different from the problem in that its essential feature is the provision of something to organize, investigate, or accomplish, rather than to stimulate thought. It may be a problem or a part of a problem, and it may embrace problems. The more good problems a project affords the better it is for educational purposes. To afford something to do, the project must necessarily arise from the interests of the children. The method may be illustrated by quoting a description of its use in the Horace Mann School. George D. von Hofe says, "The sixth-grade pupils in the Horace Mann school are studying science regardless of every artificial division. The class chooses a project, something that has attracted attention and in which they are vitally interested. The teacher then presents the information to follow not the so-called logical development found in textbooks, but the trend of thought of the pupils." [1]

It is not possible to separate the project from the problem method. Some persons define the project as the

[1] Teachers College Record, May, 1916, pp. 240–246.

"end-point" of the problem. Many of the illustrations given in the preceding chapter could be called projects. However, the project view adds distinctly to the success of problems.

Provides for Longer Assignment. The distinct advantage of the project over the old topic or question and answer method is that it provides for continuous work on the part of the pupil rather than assignment from day to day. It thus allows for weighing values and organization of material along vital lines by both teacher and pupil. Consider these points in the following illustrations:

Project in history: Territorial expansion in the United States.

In following this project the class will read widely in the text and in reference books. The work may take up two weeks and end with a debate. The two weeks' work is bound together in the project. The children think constantly about the various issues involved during the period. They not only know about this and that acquisition, but they live over and think out the general principle of expansion.

Project in mathematics: Eighth grade mensuration.

To study the mathematics involved in the construction of a house.

Practically every problem in functional mensuration will be discovered in the project. The children will be studying mensuration on a higher plane after an introduction of this kind. Some connection with a house that is being built in the community may be kept up during the entire study of mensuration. Such a project will not succeed unless drill problems aside from the construction of the house are intro-

duced. Too often it becomes more house than arithmetic. This, of course, would not be an arithmetic project.

Project in Civics:

To study city government in order to know how to improve our own. This will include a study of the home city. Many visits to different public places will be a part. Public men will be questioned and will be asked to speak to the class. During it all every child knows that his lesson for several weeks will center around city governments. Of course this will be very definitely divided among different days, but at the same time the child is interested in his daily lesson he is also interested in the larger project of which it is a part.

By doing such work the pupils are trained in independence in investigation. They learn how to follow out an undertaking.

Does Not Replace but Aids Regular Work. The project is brought into the school not in opposition to the regular work but as an aid and a supplement to it. When we speak of discarding logical order, only that part of logical order which has proved a drawback to teaching is meant, and *order* is by no means discarded. Instead, there is substituted the natural order, the order of interest and purpose. The textbook is used as a "reference handbook," and its contents are mastered and related to the child's life, not necessarily in the order given in the book but in the order of the development of the project. That which is learned in this way will be retained because it is made a part of life. Most of the knowledge gained in the old way of servilely following the text is forgotten as soon as examination time

passes, and often, to the chagrin of teachers, even before it arrives.

Supplements School Work. The project serves to keep the child interested in wholesome work in the hours after school. It takes the place of old style home work, which was usually nothing more than an addition to disagreeable school tasks. Harmful recreation is also by this means supplanted by occupations both wholesome and educational.

The construction and maintenance of a wireless plant, for example, is a project which will lead a boy into profitable fields, will keep him "off the street," and will provide a stabilizer for his disposition. Parents will find it a profitable investment to spend money on a boy in this way, and teachers will reap ample reward in better school work for any time they spend in fostering such a project.

The Part Projects Have Always Played in Education. The project is new only in the sense that it is becoming a definite term in educational literature and is receiving wider recognition in school practice. It is a universal means to education and growth and has played a large part in all education ever since learning has been an attribute of mankind. Long before arbitrary logical procedure had established its blighting control over our schools, the method of the teachers, the wise men, or medicine men was essentially the project. The learner came to the teacher in order to learn how to achieve some definite end he had in view. Even before the existence

of teachers, savage man learned of the world about him through his projects. The projects which led him to go out upon the water were, without question, at the basis of the origin and evolution of navigation. If he constructed weapons and improved upon those in existence during his time, we may take for granted that his work did not grow out of a general study but was a definite part of a special project in which he was interested at the time. All of us owe the chief elements of our education to projects. For illustration, a man moves from Colorado to Washington. This move is made the basis for more definite gain in knowledge of geography, sociology, finance, and in a dozen other special branches than any amount of logically arranged but unrelated courses could accomplish. The use of the project is the nearest the school has come to connecting education with everyday life.

The Part Projects Have Played in the Development of Great Men. It is well worth our consideration that eminent men have been educated primarily outside of schools. Many of them were failures in school. Anyone who reads the lives of great men will be struck by the part their projects have played in their education. Examples, selected from the field of science and typical of the life of any great man, are given here:

Agassiz received his education chiefly through his own investigations and projects. Before he was ten years old he had made extensive experiments. He studied animals, their structures, habits, and haunts. His proj-

ects ranged in extent from the study of living fishes in a homemade aquarium to the observation and imitation of mechanics. At twelve he had a collection of animals and plants that was famous throughout the country.

Edward Drinker Cope started scientific projects of value at the age of seven. During a sea voyage to Boston with his father he kept a diary which he filled with drawings of "jelly fish, grampuses, and other natural objects, seen on the way." He was greatly attracted by the museum of the academy of natural sciences at Philadelphia and made drawings of a great many of the old skeletal remains before he was nine years old.[1] Marsh, Wyman, Gray, and Newcomb began in a similar way. Humboldt, Hugh Miller, Jefferies, and Audubon had wonderful collections and spent their boyhood gathering specimens and living with nature. A friend of Audubon describes the latter's room as follows: "On entering the room I was surprised to find it turned into a museum. The walls were festooned with all sorts of birds' eggs, carefully blown and strung on a string. The chimney piece was adorned with stuffed squirrels, raccoons, opossums, fishes, frogs, etc."

A laboratory in the cellar, a newspaper, and a telegraph line between his home and that of a boy friend were projects which played fundamental rôles in the education of Edison.

Like illustrations from every field of human accomplishment could be furnished. The teacher need only

[1] Jordan, David S. Leading American Men of Science. Holt, 1910.

read the biography of any great man to see the importance of his projects to his education and success.

Importance of the Child's Project. The projects of youth are more important to education than are those of the adult. When the habit of attacking situations and following them to successful solution is formed early in life, the individual rises to a higher plane of endeavor. He learns to go ahead without waiting for aid. He uses the information authorities furnish him only when it works. Success in life is closely associated with the early development of these abilities. A child in the sixth grade who has followed out several good projects probably has acquired valuable information and abilities which ordinary schooling could not have developed in a lifetime. The wireless plant in the physics department of a leading college was constructed by a professor of physics under the supervision of a boy who had learned what he knew in the home project of constructing one in his own back yard.

Must Be Related to the Lives of the Children. The use of artificial projects will not help in the treatment of any subject. The old logical method is not bettered unless we put *life* projects in its place. For example, the subject "water" may be taken up by a class and all sorts of interesting facts about it developed from magazine articles. If the children are really interested in water, if it is a life project, then it will be worth while. But if it is imposed upon them by the teacher, the time had better be spent in regular work.

Scope of Project. We have not as yet found projects enough to take the place of regular class work. In subjects like home economics, physics, and woodwork, they make up the largest part of the work. In English, arithmetic, history, and civics we find many opportunities for projects, but not to the extent that we can do away with drill or mechanical procedure.

The project is likely to embrace several subjects and furnish a motive for drill, the pursuit of information, and the exercise of thought in motive and pursuit. If wisely employed, it is brought into the school only when it will make a sure contribution and stimulate better work. Whenever it is used to the disadvantage of good work in school, it becomes a distracting influence, and the teacher must judge between its value and that of the course of study. Ordinarily it is best to stimulate individual home work upon projects in addition to those connected with school studies. This does not mean that we are to neglect any worthy project a child may have, and it must be admitted that many of them are more educative than school tasks, but the possibilities of their school application are limited. As explained later in this chapter, the school must give due recognition to the educational value of the work a child does outside of school requirements.

A wise use of projects in the regular school work results in the establishment of centers of investigation. Research may in this way be undertaken in the elementary school, and as a result of following out several good

projects in addition to or as a part of a regular course of study, the children will learn how to investigate for themselves. The regular work is in this way strengthened because of the greater interest of the children and the increased amount of reading or other special work they do. When the critical points in a subject are grouped in projects, their mastery loses most of its difficulties.

The Red Cross campaign which was carried on in December, 1917, made a splendid project for many schools. Its history was investigated and reported on by the history classes. It was made the basis for oral and written composition. The children were organized at school and learned vital lessons in civics by taking part in the campaign to enlist members. The different rooms bought memberships. The children in the lower grades cut bandages; those in the upper grades undertook more difficult tasks. Many schools that had never used projects and did not know of their vital educational significance took hold of the Red Cross idea and made good educational material of it. The question is, when will schools learn that their communities and the regu ar subjects abound even in ordinary times with projects just as interesting as this one, which can be related even more closely to the work of the school?

Projects in which the entire school may share, and receive intellectual training at the same time are:

Morning exercises.

Special day programs.

Making the school more attractive.
Creation and development of museums and collections.
Organization of the noon period.
Enlistment of the community for food conservation (or other purposes).
Beautifying the home town or city.

Projects in Special Subjects

Woodwork. In woodwork the project method has now almost universal adoption, taking the place of the old task method. The child learns the handling and care of tools, how to construct joints, and all the general features of this work by making articles which are useful to him. In making a sled, for example, he must study models and woods and submit his definite plan. He then makes the different parts, the runners, joints, and bindings. Each day he cares for his tools and bench and leaves them in good order. The teacher's function is to see that his powers are fully exercised, that the project is not too difficult, yet furnishes the exercise to develop the abilities for which the course was designed.

Mechanics. In the upper grades many schools are offering courses in mechanics embodying work with metals, the principles of physics, and some chemistry. A report of several individual children from a class in this subject in which projects were made the basis of the work is given for illustration.

Report of Eighth-Grade Class in Physics

1. General attitude of teacher.

We give such a course in order to instruct the boys in the practical value of physics. A law is brought up when the time comes to use it. The pupil reasons things out for himself with an occasional suggestion from the teacher.

These boys covered in their three months' work the following:

The fundamental principles of electricity, some mechanics, heat, and sound.

2. The attitude of the class.

The class is very enthusiastic as a whole. Discipline is easily brought about by threatening to dismiss a boy from class. Several of the boys liked to put in extra time.

3. Report of the work of each individual.

B. F.: Made a thermostat which took up the expansion of metals, the conductivity of metals, etc. Made an electric toaster; in this he worked out a new type in vertical elements, and the toast is held in place by springs. In this the principles of the length of wire to heat required, insulation, and heat through resistance were involved. He did considerable shop work, such as cleaning and repairing. His attitude was quiet, thoughtful, diligent, and he showed a desire to do the best work at all times.

C. B.: Made a candy floss machine that made excellent floss, and he was called upon to demonstrate it to college classes. Made an electric switch, a telegraph key, and an electric toaster. The principles involved in his work were centrifugal and centripetal forces, gearing, wheel and axle, insulation, conduction, and connections. He was sometimes not so interested as he might have been. At the time of the floss machine he showed greatest interest. Is making a water motor to use at home with the floss machine.

C. G.: Made a thermostat, electric toaster, and an electric switch. He is slow to finish up things. He is especially interested in working around the gas flame and some work of that nature is being prepared for him. Behavior good.

G. R.: Made a vibrator whistle, a toaster, a switch, and a telegraph key. The vibrator was the only thing he made that involved principles not already stated for other boys. This boy is not so much interested in machinery as he is in construction. He does not like to use his head. Books have been furnished him, but he can find nothing in them that he wants to make.

E. I.: Made a thermostat, two toasters, a telegraph key, a wireless outfit, a wireless detector. His work has been especially good. Works fast and accurately. He will spend extra time whenever he has the opportunity. His lathe work is very good. In other subjects he is fair, and none of the teachers of the regular school subjects would have imagined that he would work very hard at anything.

H. S.: Repaired an old motor that he already had, made a steam engine that would run, and is now working on a Meccano set for his younger brother. The steam engine involved quite a few of the principles of heat and mechanics. His behavior has been very good, and he shows independence and ability to reason out things for himself. In his regular school work he had often been hard to discipline.

Special extra work: The boys made Christmas presents. One boy spent evenings and nights for a considerable time working on an electric toaster for his aunt. Some of the toasters were superior to those that the retail dealer charged from three to four dollars for. The materials cost about thirty cents.

Along with this work the boys read widely in books and magazines on mechanics. They were furnished

with a large number of references, and it was not found necessary to require that they read them. It was hard to keep them from reading and discussing physics during other periods. The amount of information they gathered outside that necessary to the construction work made a valuable addition to the results of the course.

Why are junior- and senior-high-school general science and physics so often taught in a dead and uninteresting manner when such live projects in these subjects are to be met at every hand? What boy who can make a wireless outfit, or who is allowed to fix his bicycle as a part of his regular physics, would not like the study?

History. A project in history may be of such nature as to provide work for the entire class, or it may be purely individual. The history of Thanksgiving, Christmas, and other holidays, the life of a great man, or an ordinary topic, such as the settlement of the Northwest, or adjustment of the nation to the present war conditions, may serve as a project for investigation which would be preferred by the class to regular course-of-study work. A teacher may be able so to organize the course of study into interesting projects that nothing will be missed.

The following is an illustration of the Colonial period taught through projects:

The names of the leading characters are compiled by the teacher, and sources of information about them are collected. The following make a good list: Miles Standish, John Smith, James Oglethorpe, Lord Baltimore, Jefferson,

Madison, Monroe, Washington, Edmund Randolph, Roger Williams, Stuyvesant, Penn.

The following topics are compiled and references on each topic noted:

Family life in the colonies.
Political life in the colonies.
North American Indians.
The work of the French.
The work of the English.
The Catholics.
The Puritans.
Each of the colonies.
Education in the colonies.
Relation between the colonies and England.

As the work progresses, the teacher finds opportunity to suggest or allow (it is better to allow than suggest) different individuals or groups to specialize upon one of the characters or topics. Before the course is completed, every member of the class reads the life of some eminent man and looks up data on one of the special topics. Some of the children read several biographies and investigate several topics. All of the class listen to these special reports and discuss them.

The opportunity for a project is likely to come accidentally and without notice. For this reason it is better for the teacher to have material like the above ready to suggest at the proper moment. With stimulating teaching a boy is very likely to want to know more about John Smith than the ordinary lesson gives him. When his questions indicate that the psychological moment has arrived, the teacher should be ready to allow him to read and report on the life of Smith for his regular his-

tory lesson. On the appointed day he gives a ten minute recitation in his best English. When a group of children make a special investigation, an entire recitation period may be turned over to them with profit.

A group of sixth-grade children after making a study of "Life in the Virginia Colony" finished their project by dramatizing and playing it before the entire school.

The following books were read as projects in history by an eighth-grade boy. He reported on each before the class.

The Life of Lincoln — Project, Pioneer Life and the Development of a Great Man.

The Life of General Butler — Project, A Participant of the Civil War.

The Story of Æneas — Project, Semi-mythical History.

The Story of the Moors — Project, Religious Strife.

Winning the Northwest — Project in Itself.

Hugh Wynne — Project, Individual Life During the Revolutionary War.

Geography. Geography furnishes many projects and may be organized about the special interests and investigations of the children to such an extent that a regular course of study may be covered without bothering with any artificially arranged order. Fourth-grade geography, organized into projects and based upon ordinary textbooks such as Tarr and McMurry or Brigham and McFarlane, is given here for illustration.

The following topics are selected as centers of interest.

Food, Clothing, and Shelter Industries The Earth as a Whole Land Water Air Climate Maps	These topics make up the ordinary course of study.

The teacher has in mind that these subjects are to be covered by the class. She organizes them into projects in the following manner.

Discussion is started on each topic by bringing up something interesting to the children. The text is not brought into the work in the treatment of any topic until it can be made use of to satisfy the pupils' wants. It is referred to continually in supplying information for which their projects call. They read all of it several different times, each time in relation to a different basic interest. Many other sources of information are used.

Illustration:

Clothing.

The clothes of the children made the basis.

It is found that wool, cotton, silk, and leather are represented.

The question of where these came from is brought up.

Also the question, how they came to their present state.

When the class is desirous of investigating the matter further, the pages in the geography on which information is given are referred to, and the project is to obtain all the information they can concerning their clothing. The information in the book does not begin to satisfy a class which has been properly stimulated.

Further illustration:

Maps.

The ordinary course of study demands that the children learn the basic principles of reading maps in the fourth grade.

Map making and reading makes a fine project. The teacher begins without reference to the maps in the books. The plan is to ask the children to locate something in a room so that some one could go to the room and find it. This furnishes a splendid game. After learning how to represent the different parts of their own room in diagrams, they go to the school yard and then to their home town and community.

This furnishes a background for the question of the representation of distant places, the home country, and the continent. The children have become so interested in their project of representing places to each other that they take up the maps in the book as a regular part of their interest.

Having developed in their game of representation all the basic features of map making, such as scales and coloration, they never suffer from the misconceptions which children so often acquire due to the confusion of the map with the place it represents.

There is a distinct advantage to the teacher in planning the entire course he has to cover in relation to possible projects. The plan of the year is constantly before him, and the difficult parts of the work can be made centers for projects. Their special difficulty is in this way eliminated. As mentioned before, the ordinary course of study is found inadequate to meet the demands of the children when they attack it in an intelligent manner. The teacher finds that, instead of being pushed for time in which to cover what is required in the course, it

is difficult to provide enough subject matter to keep the class satisfied.

Projects in Nature Study. Nature study should be taught by the project method. The teacher has an initial advantage in this subject in that he will not be hindered by logically arranged textbooks. There are few texts in use, and the one which has had the widest circulation is distinctly on the project order.[1]

Illustrative projects in this subject are:

1. The arrival of the birds in the spring (any or all grades).

Constant watch for the first arrival of each kind with reports at school.

A study of the habits of some of these (both from books or magazine articles and from life).

Their nests.

Eggs.

Food and methods of finding it. (Watch them.)

Value to man of the insects they destroy.

How they care for their young.

2. Mushrooms. (Intermediate or upper grades.)

Children collect the different kinds and bring them to school for identification.

Read of the poisonous nature of some and methods of detecting these.

Make the spore test and others at school. (Each child should be allowed to make the test.)

Survey the community and teach the children to tell each edible variety; warn them of the danger lurking in ones which to all outward circumstances appear innocent.

[1] Hodge, C. F. Nature Study and Life.

3. Snakes. (Any or all grades.)

Catch the different non-poisonous varieties and bring them to school. The teacher should illustrate that they are not dangerous.

Make a study in books and magazines of the value of snakes, toads, and lizards to man.

Teach the children how to tell the poisonous kinds, and ascertain which of these are found in the local community.

Other live and interesting projects may be found in the study of hundreds of varieties of wild life found in the home community, and concerning which the public library will furnish plenty of material in books and magazine articles, which may be related to the children of the lower grades, read to those in the intermediate grades, and read by those in the upper grades.

Home Projects

Educational Value of Home Life. When the final test of the efficiency in life of a given individual is applied, it is usually found that his life outside of school was a larger factor in the development of vital abilities than his schooling. The child spends approximately one third of the time he is awake in school. Presuming that everything he does there is of great educational value, the one third of his life spent in school is not likely to have as much influence upon him as the two thirds spent outside. When we remember that most children live a more active, aggressive life outside of school than inside, the dominance of the home and community life in their education cannot be doubted.

Many individuals succeed in life with little or no schooling. We find such persons, highly educated both tech-

nically and academically, playing leading rôles in every walk of life. In fact, it is a common occurrence to find school-trained men living neighbors to others who have had practically no schooling, the latter being more successful in their respective vocations, reading more and better books, and leading a larger life socially. This need not indicate that the school has been a failure,[1] but such occurrences demonstrate the value of the forms of education which are found outside of schools.

It must be kept in mind that every individual, whether he is a success or a failure, is self-made. Those who have good schools to attend have an advantage; those who have good homes are even more fortunate; but those who are trained under the proper school-home stimulus and guidance have an ideal educational environment. To the extent that the school enlarges the everyday life of the child, it will be successful in truly educating him. What he gets there must be a part of him; he must try to assimilate and use it. In order to bring this about, the school must reach beyond the five and one half hours of its daily program and become an organizing and stimulating factor in the entire life of the child.

Recognition of Home Work by the School. In the past the school has been too exclusive. It placed too much stress upon where and under what regulations an achievement was made. The actual educational value of the work

[1] Studies show that the school-trained man usually excels, but this is true only if he is a student in life also. Many well-schooled men fail because they do not grow beyond their schooling.

A Corner of a School-Home Project Exhibit. The Girl in the Center is Making Chocolate on an Electric Toaster Made by One of the Boys. Cakes, Bread, etc., are at the Left

an individual did was not made the basis of recognition. In fact, schools constantly ignored everything that was not done within four brick walls and under a prescribed course of study. In some places it was the custom to use the energies of the school to belittle good work done outside of its sphere of influence. Only recently have school authorities come to evaluate properly home and community work in their schemes of crediting the individual with educational progress.

The modern school realizes that a child's home work is not a disturbing factor in his education, but that it is part of his training even more important than school work. Teachers used to remonstrate with parents for providing too much for their children to do outside of school. To-day we realize that the boy who must milk and care for a cow and the girl who must help manage and take care of a home are provided with educational gold mines which may be worth far more as stabilizing influences and agencies of development than many of the tasks performed in school.

In recognizing home work and utilizing it in the child's education, the school faces a many-sided problem. Any scheme is better than ignoring it, but the proper correlation of home and school work is no easy task.

Methods of Recognition. Three definite ways of recognizing home work have been developed by school authorities. They may be described as follows:

1. Work at home is made a substitute for and is allowed to take the place of school work. This method

was first developed by Superintendent Alderman of Oregon. He noted that many children were living practically useless home lives. It was difficult to get them to do their school work, and in conferring with parents he found that they were making every possible sacrifice and doing all the work at home themselves in order that their children might have their time for advancement in school.

Concluding that work, like charity, is best when it begins in the home, he set about devising a means of stimulating home work. He talked the matter over with the children, and they agreed that everyone should help at home. Following this he began to substitute the performance of home tasks for portions of regular assignments at school. When the regular algebra lesson had been ten problems, he cut it down to five and substituted five home tasks for the other problems. He claims that the immediate result was better work both at home and at school.

However, experience has shown that Alderman's rather spectacular results will not continue after the spell of newness has worn off and the substitution of these home tasks for school work becomes a part of the regular program. In doing away with a part of the school assignments we admit that they were not necessary. Either the subject is not worth requiring, or the amount of work we have been giving in it is more than is necessary to provide for proper advancement. But when we properly select our subject matter in the school, it is impossible to substitute home tasks for it. If a child

cannot read, he will not be helped by being allowed to split kindling at home in place of reading. It will not be advantageous to add to his reading credit for home work not connected with reading. There must be some better method of recognizing home work.

2. A second method is to add home work to the regular school list of subjects. Cards are sent home at regular intervals. The parents fill them out with statements of the number of hours the children have spent in the performance of different home tasks. "Home work" is given a place on the report card and the grade in it is used along with those in the regular school subjects in calculating the child's general average, which is made the basis of his promotion.

This method has advantages over that of substituting home work for that of the school. Definite recognition is given any work a child may do at home. By stimulating home work and giving it a place on the report card along with the work of the school we dignify and elevate it in the eyes of the children. Some recognition of this type must be retained.

There are some conditions which make this method inadequate to meet the situation. The work of the school is to educate. It must do more than recognize. When we record that a child has spent thirty-seven hours helping her mother at home and give her a grade for this work, we are not allowing for the factor of improvement. She may be doing it as so much drudgery and in the most slovenly and disadvantageous manner. In merely re-

cording a grade on the basis of so many hours, the school may be confirming her in slovenly work. This problem becomes more prominent as the months and years pass by and the school continues to give a child a grade for the same routine work. Some definite means should be employed to stimulate the child to improve his outside work and educate himself by it. Also, the work of the school and that of the home are not properly correlated by this method. It is a decided step in advance over the old method of sacrificing the home life for the school, but it does not go far enough.

3. The modern method is that of the school-home project. The school in this way not only stimulates home work but provides for its improvement and organization. If a boy cares for a cow at home, the school, by stimulating this work as a project, makes it one of the most valuable educational features of his life. The work is made much more interesting to the boy when he finds that his old drudgery and routine is only one phase of a many-sided project which is interesting at home and may be made a part of his school work.

Methods of Organizing School-Home Projects

Survey. In order to secure a basis for successful organization, the teacher should first of all make a survey of the projects that are possible in his community. The interests and home duties of each child are tabulated. The data obtained in this way is made the center of a school-home campaign.

The following home activities were tabulated for the sixth grade in the month of January at the University Heights Elementary School, Seattle, Washington.

Reading books.	House work.	Delivering papers.
Piano lessons.	Care of pets.	Violin lessons.
Knitting.	Making toys.	Going to movies.
Work on farm.	Swimming.	Growing flowers.
Making clothes.	Collections.	Caring for live stock.
Making quilt.	Care of furnace.	Chopping wood.
Clubs.	Saving money.	Mechanical drawing.
Painting.	Home games.	Art work.
Carpenter work.		

How to Deal with These Projects. After the teacher knows what boys and girls are interested in outside of school work, his task is to have each child concentrate upon one or several of his interests and make reports of progress in them. Any of the interests noted in the foregoing sixth-grade survey may amount to very little if allowed to go along without any attention. Most of them may be developed into very vital and dominating features of the child's life if the teacher will pay some attention to and encourage them. Usually he can refer the child to books or articles which will help in carrying on the project. He can show how to make the interest worth while, and he can keep up interest so that much more will be accomplished than if the project had not been given recognition.

Thus Reading Books becomes a project of Reading as Many Good Books as Possible During the Term. The

child reports on them to the teacher, who mentions other good books to him. He knows that the teacher is interested in his reading during the entire term, wants regular reports about it, and will always be glad to hear about it. He knows that his grades will be affected by the way he goes at this project.

Painting or carpenter work after school hours, instead of being done in a haphazard fashion and only to while away the time, becomes a live issue when taken by a child as his home project. He becomes a student of painting. He learns of the different kinds of paints. He notes painters at work: sees how many brushes they use, how they hold the brush, how they mix their paints, what they do to boards before they paint them, etc. He follows carpentry in the same way.

I have seen boys learn almost everything there is to learn about a trade by following it as a home project for several years. For a project a boy learned enough to paint his father's house in such a way that the paint outlasted that put on by regular painters. He followed this by contracting painting during a summer. Other projects may be developed in the same way.

Illustration of a School-Home Project in Detail. The following is the story of how one child was stimulated by his teacher to take care of a pen of chickens as a home-school project.

J—— reported in a seventh-grade class that he was caring for chickens at home, and that he would like to work with them as a project which would receive recognition at school.

He had eight hens and a rooster. He was feeding scraps and some grain. He knew little or nothing about chickens or their care, had read nothing about them, did not know the values of the different kinds of stock, and knew nothing of feeding for greater egg-laying.

For two years he kept chickens as a project. In that time he read widely in books and magazines. The class visited his home several times. Any child who wanted to know anything about chickens usually went to J—— for information. He took great pride in his knowledge and accomplishments.

The teacher told him to write to the State Agricultural College for reading and information. It was not far from his home and he made a trip there to see the chickens they had and to talk with the "authorities" about chickens.

In his own pen there was gradually produced a great change. He found that none of his chickens were of good stock, that two hens did not lay at all, and that the feed he was using was not the right kind for laying hens. He sold his old stock. He learned to buy pullets in order to get eggs in the winter. He sprouted oats in the cellar at his home in order to have green food in the winter. He reconstructed his pen and house to make them warmer. He kept a definite daily record. He learned how to make chickens "pay."

During the entire time he had a large and vital interest. He would often hurry home from school to learn how his chickens were doing and in order to work about his pens. He soon knew different poultry magazines and read them. He knew every chicken ranch within several miles. He competed at shows and won several prizes. The monthly footings of one of his account books are given here for illustration.

Purchased on Sept. 14th, 4 hens for which I paid $3.00.

Account for Sept.		Paid $3.00 for hens	
Gain, 1 egg, Value	$0.02		.50 for feed.
October			
Hens' gain 33 eggs @ 30 cts. per doz.	.82	Paid feed	1.95
		1 doz. pullets	6.00
November			
Hens gain 12 eggs @ 40 cts.		Paid grits	0.25
December			
Hens gain 20 eggs @ 40 cts.	0.67	Paid feed	1.60
January			
Hens' gain 133 eggs @ 40 cts.	4.40	Paid. No feed purchased	
February			
Hens gain 160 eggs @ 30 cts.	4.00	Paid feed	1.80

Definite School Time. At least one school period per month should be given over to reports by the children on their home projects, and a period every two weeks can often be used to advantage. Great interest in these reports should be shown by the teacher, and whenever possible the child should be encouraged to bring sample products with his report.

A record should be kept of each project undertaken, and written and oral reports required concerning its progress. The teacher and the entire school may sometimes go to the child's home to see some interesting development. Bees swarming, a brood of chickens of a special variety, an unusually good garden or lawn, or a wireless apparatus may make profitable such a visit. These excursions are always followed by awakened in-

terest on the part of the children who made the call and also on the part of the pupil whose project was good enough to be visited.

The great problem is to keep the child interested until he reaches the place where his project is of educational value to him. If he starts a garden, for example, he is likely to lose interest after ten days or a couple of weeks. The definite school attention given his project will help overcome the laziness and lack of persistence of the average child. When the atmosphere of home achievement is made to pervade the school and is kept there throughout the year, good results are bound to follow. We must make this work a vital part of our teaching and must not fear to give it regular school time if it is to succeed. Its value in the proper development of children is so great that any amount of time properly spent in this way will not be wasted.

Exhibits. A method which is certain to stimulate home projects is to have several exhibits of combined school and home work during the year. One in the middle of the year and one at the end of the year, or one every three months will provide good stimulus. A single exhibit at the end of the year is not worth much, for school being out, the spirit created results in no action. The exhibit in the middle of the year will afford suggestions to the school and the community which will be carried out in preparation for another one coming. Those who have shown good results will be encouraged to do even better in order to reveal improvement, and those who have not

been able to do very much will receive suggestions from this first exhibit.

There is a special advantage in having children together after an exhibit of this kind; they talk for weeks about the different objects of interest, and teach each other how to succeed at the various projects. The greatest excitement I ever saw among school children was caused by a home school exhibit given in the middle of the year by the training school at Greeley, Colorado. The materials were brought Thursday evening and Friday morning. The different grades appointed committees to arrange their space, and the children and people of the town were admitted Friday afternoon and Saturday. Interest was so great and enthusiasm ran so high that some of the teachers voted against a second exhibit because they thought it would cause "overstimulation." Any teacher who will carefully organize his school and community and carry out two or three of these exhibits during the year will be fully convinced of the power of this method to generate interest.

If prizes are given, care should be taken to prevent rivalry and jealousy. It is better to give a large number of inexpensive awards than a few that are costly. The task of organizing the prize system in a way that will avoid injustice and the resulting dissatisfaction is a difficult one, and unless plenty of time can be given to it, it may be better to have the exhibits without awards. Exhibits succeed well either way.

CHAPTER IV

MOTIVES

In bringing children to the place where they understand that school work is provided for their benefit and is not imposed upon them, the modern school has made it possible to teach a great deal more in the same time than did the traditional school. The subject matter that is taught is also more effective in fitting the child for life. Thus a double gain has been brought about by motivation.

Satisfying Needs

Some Problems in Satisfying Needs. The fundamental feature in motivating school work for children is to select subject matter in accordance with their needs and to show them that they need it. There are three definite problems which the teacher must face in doing this.

1. He must constantly study his class. Each group of children will present its special problem for the live teacher. Until he has made a survey of their capacities, he cannot proceed with his instruction. His course may be before him, but he knows that much time will be wasted and many children may be turned against the subject or receive a bad start if he plunges them into it with-

out first adjusting it to their needs. The first problem is to make a survey of the class. Following this a constant study of the different individuals will be necessary. The human beings we teach must ever be kept in mind when we plan the work they are to do.

2. The course of study should first of all provide for the definite needs of those who are to follow its requirements, but it must also be constantly readjusted in accordance with these needs. The teacher may have little to do with the shaping of the course and may be required to teach one that has been made for him. In such a case he will have to devote his energies to readjustments. Thus, instead of blindly teaching his course, he will study it constantly with the idea of reshaping different parts to make them effective in overcoming specific weaknesses of the children or useful in satisfying their growing ambitions for learning or improvement.

3. A special feature of method is the harmonization in the minds of the children of the course of study with their own specific needs. A large amount of time may profitably be spent in this harmonizing process, for after it is once accomplished, the capacity of the class is so much increased that results are not to be compared with work done by a spiritless group which feels that it is merely performing tasks to satisfy the teacher or the school authorities. The average child, when he sees that he really needs to know that which he is required to learn, is likely to learn a great deal of it without the aid of a teacher. His entire school life is in this way placed

upon a higher plane. He realizes where he is going and is likely to exert himself not only in trying to get there but also in devising special ways of getting there.

More Reliance upon Children. It is often surprising to what degree children realize what is good for them and how willing they are to do ordinary school work when they are allowed to initiate it instead of being required to do it without consideration. To most adults who love freedom a task laid on from the outside is irksome, and many grown men and women say they felt the same way when they were children. Mark Twain may be taken as an example. He said he always disliked anything which bore the resemblance of a yoke. "Taxation without representation" was given as the cause of the Revolution in America. The colonists maintained that they would have been glad to do anything for the mother country which a body of their own representatives should decide was right.

A mistake of school teachers has been to impose tasks upon children who are willing to do these very tasks but who immediately rebel when forced into them. It always takes the joy out of good work to be robbed of the responsibility for it. We must take the time to allow rather than require children to learn. Education after this intelligent method is certain to be more lasting than it was under the old suspicious régime, which created many of its own difficulties by its coercive methods.

Illustrations in Arithmetic. A teacher in the second grade found that her course suggested that the children

learn the combinations to twenty, the multiplication tables to the fours, acquire some basic ideas in liquid, dry, and linear measures, learn to a certain extent the values of different pieces of money, and solve the easier examples in making change. She first made a study of the class and found, as is always the case, that many of the children already knew a great deal of the subject matter thus prescribed, that some of them knew a little of it, and others had no arithmetic knowledge at all. This took about two periods at the beginning of each new topic. As each division of the subject was taken up, the necessity for learning it was explained to the children. They were allowed to talk freely about the value of knowing how to add and subtract, how to measure, make change, etc. A marked interest in these values was shown, and a better working spirit resulted. Some of the children came to school with lessons prepared in advance, showing that they had been working at home. One boy learned all his multiplication tables. There was a lack of response on the part of a few. The special failings of these were studied by the teacher. These children were told of their weaknesses and in overcoming them they were afforded a special motive for doing hard work.

Children in the eighth grade may even take part in discovering their own needs. An illustration of such work and its results is given in the words of the teacher:

> While studying the individual needs of my class I requested each individual to keep in a notebook a record of his

daily work. Four days a week we graded the papers in class and one day I graded them and returned the papers to the children. Our work was in interest and our problem was to develop the ability to get correct answers. In his notebook each child kept track of the special difficulties which made him inaccurate. The faults were divided into three types, (1) carelessness, (2) mistakes in method, and (3) mistakes in addition, division, multiplication, or subtraction (if these occurred in fractions or decimals it was noted). I collected these notebooks once each month, and the children by following their notes soon found wherein they were weak. Many of them would come to me and talk about their peculiar mistakes. There were, of course, a few who did not seem to care, but even these were more interested after they had learned just why they were not accurate. They knew that their lessons were designed to meet their specific needs, and that they were not being imposed upon by being required to work useless problems.

A page from one of these books is included here for illustration.

Date	Problems Attempted	Correct	Carelessness	Method	Mistakes			
					Add.	Div.	Mul.	Sub.
Sept. 9	4	1	2		2	1		1
Sept. 10	4	3	1					1
Sept. 11	4	2	2		3			
Sept. 12	4	1	2		1	1(dec.)		1
Sept. 13	4	4						
Sept. 16	4	1	3					

This boy soon found that his arch enemy was carelessness. By watching himself closely he was able to improve in his

average score in accuracy. This record furnished a motive for increased effort.

Following this procedure we were not long in eliminating all difficulties in method. Our chief problem soon became one of eliminating carelessness. Addition was a stumbling block because the pupils forgot to "carry." The zest showed by the entire group in discovering and striving to eliminate the sources of their failures was encouraging.

Tenacity on the part of the teacher is essential in the successful development of such a plan. After a week or two the class is likely to drift back to the old slovenly program of working without any definite end in view. This is very likely to occur when the teacher does not keep the children's records in mind or give them due attention during the class periods. When the children understand that the plan is going to be a definite part of their work, and when their records are given due attention by the teacher, they will settle down to a study of themselves which is likely to carry over into life. After a month or two has passed, enough data to give the child an indication of his special weaknesses will have been accumulated. Overcoming these self-discovered deficiencies is usually sufficient motive for good hard work on his part without further stimulation by the teacher. However, there will always be a few who will not respond to treatment of this nature. There is no rosy road to success in practice. Many teachers fail because they expect their schemes to work without friction from the very beginning. Sometimes they merely propose them

to the children and expect them to blossom and bear fruit without further work. We cannot repeat too often that the persistence of the teacher in continuing any good plan until it begins to show results is essential to its success.

A fifth-grade teacher gave attention to the large number of occasions for adding, dividing, multiplying, and subtracting fractions in the local community. Three boys were making a garden together. How were they going to divide the products so that each would have his proper share? The class decided to give flowers which cost a dollar to one of their number who was sick. What amount should each child pay? The teacher then offered to pay half as much as the class. Did they know now how to discover what each should pay? Once or twice each week a part of a period was given over to a discussion of the need for learning fractions. Examples from the community which the children needed to know how to solve were brought in by them and the teacher. The result was a class which knew that it was learning something of value. These values were constantly kept in mind throughout the year, and whenever a child found that he could use his knowledge of fractions in his daily life, he was given opportunity to tell of it at school.

Decimals may be, and are in many places, taught in the same way. Our chief use of decimals is found in transactions which involve money. Children in the fifth and sixth grades where decimals are usually taught often take part in transactions involving money. One teacher

found that a large number of problems which would show the children their need for decimals could be discovered by calculating the cost of articles which the children wanted to buy or had bought. Part of a period once and sometimes twice a week was given over to a discussion of these needs. The prices of roller skates, sleds, dolls, mittens, etc., were investigated by the children, who came to class with accurate data collected from the stores. Definite needs for knowing how to add, divide, multiply, and subtract these figures, which involved decimals, were revealed in this way.

As an introduction to a study of interest a class was allowed to make a study of the uses of interest in the community. They found that liberty bonds were to run for a certain number of years at 4 per cent. Persons of their room had purchased several of these. How much were their profits to be? Many of them found that their fathers had borrowed money at different times and that interest was charged for this. One boy heard his father tell a man that his home didn't pay in a financial way, for it yielded only about 4 per cent after taxes and repairs had been deducted. The work he had been having in class caused him to notice such a statement. He brought the entire problem to school. Several of the families represented were paying for homes on the installment plan. The children were soon convinced that it was necessary to know how to solve interest problems in order to succeed in a financial way. In other words they realized that they needed the very work they were doing in school.

It must be kept in mind that such problems cannot be found in sufficient numbers to furnish all the drill the class may need. The work, at least under present school conditions, seems to succeed best when the life needs of the children are brought in now and then to let them see that their regular work is developing abilities which they are going to need in life.

Needs in Writing. It is not difficult to collect from the local community many examples of the necessity for rapid and legible penmanship. First of all the child will want to write real letters. This furnishes a splendid motive for most children through the fourth grade. The teacher allows them to write letters at school to friends and relatives. They practice in order to be able to write these letters quickly and legibly, and great zest is usually taken in the work because they feel that they are doing it with some definite and useful purpose.

Above the fourth grade the vocational motive may be relied upon to furnish stimulation to the majority of children. They may be asked to bring to class the needs which their parents find for writing. Special incidents are related about certain persons who wished that they could write better. The Ayres scale may be taken by the children to the business men of the town, who are usually willing to underline the degree of perfection which should be reached for success in their particular occupation. With these local needs before them the children have good reasons for trying to improve their writing.

When a score of seventy is made, the child should be

excused from further practice. Little difficulty in the way of motivation will be found when this definite goal is added to the study of the local needs for swift and legible writing. The children know that their work has been designed to satisfy their needs and that when they have achieved the degree of success that is necessary they will not be required to practice further.

Language Based upon Local Needs. In the four lower grades the children are easily made to understand that they must be able to speak fluently and accurately if others are going to comprehend what they say. There should be a large amount of story telling by the children to each other in these grades, and the motive and purpose of it all is to develop their ability to tell stories in a way that will interest the group. A child has a definite reason for preparing his story and saying well what he has to say when his success depends upon his ability to please the class.

Written expression may be motivated in the same way as writing. The children should constantly be made to understand that what they write will be read by someone and that they must learn how to write accurately and fluently, else those to whom they write will not know what they are trying to say.

These two motives furnish the basic reasons for oral and written speech throughout the grades and even in life. In the upper grades a great deal of speaking to his fellows should be required of every child. His written composition can be made a form of communication with

the teacher and the rest of the class. The children are asked to tell and write of things which will interest the group, and the reaction of the group is made the criterion of the success of the speech or composition.

As in the other subjects a study of the community will show many needs for being able to speak and write well. The children may be allowed to discover that the lawyer, the minister, and even the business man are called upon to make speeches; that the first two are quite dependent upon their ability to speak. Many examples of times when local persons wished they could speak better can be collected in any community. The necessity for being able to express oneself accurately in writing may be shown by finding business men in the community who have selected special persons from a large number of applicants because of their well-expressed letters. It will be found that others have not been selected because they wrote poorly composed letters. Many persons are now earning money by writing for magazines. Children who appear to have gifts should be encouraged by being told that they may be able to do something like this. In a certain small town the local newspaper gives the boys and girls who excel in their English, positions as reporters when they graduate from high school. In the last ten years fully a dozen of these boys have become editors of newspapers, and a large number of others have become reporters for dailies in the cities. This practice has furnished the basis for better English composition in the upper grades and high school of this town.

Former graduates of a school, the grown-up brothers and sisters who have taken commercial courses and have obtained good positions and find the ability to compose fluently and accurately very essential to success, are often willing to come and talk to the children about the necessity for learning to write well early in life.

In grammar grades every means at the teacher's disposal should be used to foster self-criticism and the study by the child of his own peculiar needs in English. A notebook like that suggested for arithmetic should be kept. In this will soon be collected the special points in expression, punctuation, spelling, etc., which cause him trouble. He should be encouraged and stimulated to make his oral and written work focus upon these needs. Then when he writes and speaks or studies punctuation and grammatical construction, he will know that he is working with the definite goal of overcoming his own weaknesses in a subject which is essential to his larger success in life.

A few notes from a "Self-Study Book" of an eighth-grade girl are given here for illustration:

FEBRUARY

Date	Oral	Written
3d	Too many *ands* and *whys* 7 *their* for *him* 3. Number of pronouns *set* for *sit* *hasn't come* (not *came*)	

Date	Oral	Written
7th		Comma 5 Spelling *until* (not two *ll*s) *committee* (double in every case)
9th	Too many *ands* 6 (T. suggests that I should try to have in mind what I am going to say, for the *and* shows that I stop to think in the middle of my sentence.) *their* for *him* 2 (*Someone* is singular and should be followed by a singular pronoun.) *saw* not *seen* for past (This is just habit, for I know better.)	paragraph 3
12th	Too many *ands* 2 (Teacher said that my speech was free from *ands* in the first half which showed that when I had prepared I didn't need to over-use them.)	
14th		Comma 5 (In a series, like *John, Henry, and I*, I must always have a comma before *and*.) spelling

Enough has been given to show the method used.

The value of this scheme has been proven. For three years I regularly observed oral English and collected all the compositions written by eighth-grade children in the Training School at Greeley. Children wrote themes throughout the first year and constantly made the same mistakes, although they were plainly marked and the usual method of teaching the correct forms was used. In six months, with the definite self-study campaign and the individual notebook in use, a very noticeable gain in both interest and results could be seen.

Getting the children to keep these books is rather difficult at first. They must be taught to write well in them and keep them in good form. The expression and punctuation in them should be graded at least every three weeks, and definite attention given to them in the regular class periods. When properly handled by the teacher they soon become a great source of interest for the children and furnish a splendid motive for the improvement of written and oral English. The form given in the illustration was finally evolved as providing full opportunity for recording all mistakes and comments of value and at the same time picturing accurately the child's progress in eliminating them. The numbers after the entries indicate the number of times the mistake was made in a speech or a composition on that day.

These books were found to be very helpful to the teacher. He, as well as the children, can tell by them whether or not improvement is going on. A special

caution is necessary to the teacher who expects daily improvement, for children are likely to be erratic in their progress. A child may make a very bad record after several weeks of apparent improvement, and while this should not be overlooked, too much can be made of it. Progress in written and oral English comes slowly, and many failures and what seem to be backward steps will have to be encountered. The teacher must also be very careful in grading and be sure of himself in marking mistakes, for nothing is more confusing to children than the failure of the teacher to mark the same way twice.

Children's Needs in Reading. When the child is learning to read, it is not difficult to keep him reminded that a new world will be opened to him as soon as he has gained the ability to interpret the printed page. His attention should constantly be called to signs and printed matter which he meets in daily life. When stories are told him, he should be told that as soon as he can read, he will be able to get thousands of stories from books. A thoughtful teacher can find material in any community which will be useful in keeping before children their need for learning to read.

An illustration of motivation of this type is found in the work of the Horace Mann School and is described in Teachers College Record.[1] The two basic ideas in the work are: (1) the provision of material which will lead the child to see his need for reading, and (2) the selection

[1] Sept. 1916, pp. 330–343.

of those materials which have the strongest appeal and are the most effective. The quotations which follow are taken from this article.

The first definite step in the work was to acquaint the children with their own names in printed form. . . . Some difficulty had been experienced in distinguishing the proper chairs for individual children according to their size, and we decided to print their names on cards and fasten these to the backs of the chairs. . . . The children needed but a few minutes to learn the appearance of their own names and they never made a mistake afterwards. Several children soon learned to recognize other names as well as their own.

Boxes of colored crayons had been distinguished up to this time, by a paper of the proper color pasted on the ends of the boxes. . . . An outfit of No. 17 Superior Type was provided, and in the holder which is furnished, the words red, yellow, blue, green, etc. were set up. The children did the printing, which is simply a stamping process, and cut the labels and pasted them on the boxes.

. . . . . .

A key card was made on which were pasted squares of paper of various colors. The names of the colors were printed beside the squares. Separate small cards each containing a single colored square and other cards of the same size each containing a corresponding word were provided. The puzzle was to match up all the colors and words, using the key card first and then discarding it. This puzzle was very popular. . . . Many other puzzles involving the reading of words, phrases, or sentences were invented, and in all of them the element of individual control was present so that the children could use them entirely alone and know whether work was correct or not.

Reading, making, and using signs offered a rich field for

interesting activity. Signs, which are everywhere about the child in a city environment, are an early source of interest in the printed symbol. Often in connection with their building with the big floor blocks the children made crude attempts at reproducing such signs as For Rent, Bank, and Keep Out. It was not at all uncommon for them to notice the signs about the school and college buildings and in the neighborhood and to attempt to find out what they told. They always asked about a placard that was occasionally placed on the door of the room announcing, "This room is not open to visitors to-day," picked out the different words and asked what they were. They discovered the meaning of the words Push, Pull, In, Out, and showed interest in such signs as, Take East Elevator, Take West Elevator, Please Keep off the Grass, and many others.

. . . . . .

The children also made signs for themselves. Several small sets of type, which are inexpensive, were bought. With these outfits the children love to print their own names, various signs for their dwellings, stores, hotels, boats, engine houses, banks, and other enterprises.

Other environmental interests were drawn upon for material. Matching names to pictures, reading descriptions of pictures in story books, etc.

It is interesting to note that the teachers in the Horace Mann School place even greater stress upon motivation and the interest aroused in the children than they do upon immediate results; and this is right, for the realization of their need for reading will cause children to learn and grow when they are not in school. In the description of results we find:

Other much more important results than the remembering of words (although this was not neglected) in beginning reading were accomplished. The children's consciousness of the significance of reading and of its importance to them was increased. . . . They turned eagerly to books without the slightest pressure from the teachers and showed great persistence in mastering the difficulties encountered.

An Informal Attitude Is Necessary when Needs Are Made the Basis of Study. It goes without saying that all unnecessary formalities must be discarded if children are to be taught to discover their need for what they are taught. The modern school is likely to grade the questioning child higher than the one who servilely follows directions. "What is its use to me?" or "Why do I need to know that?" is a very appropriate question for children to ask. The child's learning is put upon a higher plane when he begins to ask such questions and to consider his school tasks in this light. He should be encouraged in this, not regarded as a nuisance on account of it.

This attitude may be illustrated in problems of discipline, for it is here that unnecessary formalities occur most often. The teacher and the children may rightfully question the need for such practices as the following:

1. Forming in straight lines at the door whenever a group leaves the room.

2. Marching like soldiers when moving about within the school building or on an excursion.

3. Sitting with fingers interlocked on the desk when assigned tasks are completed or when waiting.

4. The prohibition of whispering, idling in the schoolroom, etc.

In all these cases the children should be taught that they are not formal duties and may be dispensed with as soon as it is clear that they are not needed. If the pupils can come into the building in an orderly way on their own accord, they should be allowed to do so without military requirements. They should be allowed to speak to each other when they show that they can do so without disturbing their own work or that of the room. Freedom of any sort should be limited only when a definite need for such limitations can be revealed to the children.

Discipline is thus motivated when the children realize that it is necessary. A splendid motive is furnished them to act as they should do when by so acting they are relieved of unnecessary restraint. Discipline then becomes the same in school as in life, for the reason for civil laws is that they prevent individuals from interfering with others and society at large. When one shows that he needs them, artificial restraints are imposed upon him by these laws.

Psychological Moments May Serve as Motives

When something special is happening in the community, when the children are doing something outside of school, or when a child has made an important discovery,

school work is motivated by connecting these occasions with it. This will necessitate a flexible application of the course of study, but courses of study are made to be adjusted. When they are rigidly followed in logical sequence, motivation is hard to secure. A fact that is well motivated can be taught "out of order" and will be remembered and used. Illustrations of the use of psychological moments in different subjects follow:

Hygiene. Suppose it has been discovered that the city water is contaminated. Notices appear in the papers that it is not fit to drink without being boiled. In both civics and hygiene the classes go to studying the water question. They learn a great deal about pure water, its necessity, the reason why water is sometimes impure, and how the city may go about insuring pure water for the people.

A contagious disease has broken out in the neighborhood. It may be measles, German measles, scarlet fever, or some other disease. It is made the basis for a study of contagious diseases, the laws that have been passed in the city and state in regard to them, and the duties of citizens in case they or their families are affected.

A child is burned. The burn is treated and made the reason for a study of burns. A child cuts his hand. The occasion is used to teach hygienic care of wounds.

Arithmetic. The assessor is calling at different homes. The occasion is used to teach taxes. As much is made of the local tax situation as possible.

The farmers are selling or storing their corn, wheat, beets, etc. Markets, prices, and the contrasted advantages of selling and storing are studied.

There is a liberty bond campaign on. This is used as a motive for studying percentage, bonds, etc.

The prices of food, clothing, and shelter have increased during the war. This is used as a motive for figuring costs. Investigations are made and the problems discovered are used in the classes.

It is time to plant a garden. What will it cost before it is finished? It is Christmas. What will the celebration of the holidays cost? What does a Thanksgiving dinner cost?

Geography. The war in Europe furnishes motivation for almost all the geography that can be taught. What effect upon the war would the entry of Holland have had? What was the real significance in territory, men, guns, supplies, etc., of the Russian collapse? What would Pan-Germany have been if the hopes of the Junkers had been realized, etc., etc.? There are plenty of psychological moments here.

McMurry used the Mexican situation to motivate a study of Mexico. Should the United States intervene in Mexico? This furnished a basis for gaining a knowledge of the country, for no one could answer intelligently without being acquainted with conditions in Mexico.

The increasing cost of automobile tires may bring up the question of the rubber industry. The price of shoes

may be related to the hide situation. Wool, cotton, etc., have the same local connections.

Woodwork. Repairs are necessary in the school. The class in woodwork makes them. Chairs are needed for the primary class. They are made in the school shop. A play is to be given. The woodwork classes make the equipment, etc.

Home Economics. Orange marmalade is made for the soldiers. Dresses are made for an orphan asylum. The girls need dresses. They make them. Other illustrations could be given.

History. An election campaign is going on. Political parties are studied in school and the election used as a constant motive. The war, of course, furnishes motive for everything here.

Instincts, Interests, and Play as Motives

The factor of necessity has been placed first in this discussion because the necessary work of the school should not be interrupted by motivation entirely through instincts, interests, and play. Back of any other motive we must constantly keep in the child's mind a realization of the need in life for what he is learning. Then if we can make the work more interesting in the immediate sense, so much the better, and motivation cannot be mistaken, as it sometimes is, for a substitute for school work rather than a powerful aid and a necessary basis for it. The fundamental feature of motivation is the realization by the learner of his need for that which he is learning.

A Dramatization of King Arthur by the Fifth Grade of the Training School, State Teachers College, Greeley, Colorado

CHAPTER V

THE DOCTRINE OF INTEREST IN PRACTICE

Interest a Universal Doctrine. It would not be overstating the case to say that every great teacher has believed in and practiced some form of the doctrine of interest. I have at hand quotations subscribing to its use from Plato, Aristotle, Quintilian, Latini, Comenius, Rabelais, Vittorino, Kant, Froebel, Herbart, Meumann, Hall, Dewey, Suzzallo, McMurry, Thorndike, Judd, Burnham, and a large number of others. Practically no one of importance has taken issue with the principle; the following quotation is an explanation of practice.

"The Francis W. Parker School [Chicago] stands for the proposition that work to be really profitable need not be irksome, but, on the contrary, where interest is stimulated, habits of attention and industry are more easily formed and are more enduring than where the reluctant mind is urged to tasks the uses of which are not understood. This does not mean that the distinction between work and play is to be confused. The same positive and sustained effort, the same persistence, determination, and concentration — and the development of these qualities is essential to education — are required by the child in his work as by the adult in his; the in-

centive of interest is felt by each, not as turning work into play but as making work pleasant."

In the directions to the teachers of the Indianapolis public schools the following statements may be regarded as furnishing the basic principles:

"The primary requisite is a teacher with intelligence, sympathy, ingenuity, spirit, and, withal, the power to interest children.

* * * * * * *

"The wise teacher guides but does not repress. The child will master the more difficult tasks as well as the easier ones provided he works under the stimulus of interest."

These statements might be taken as representative of the attitude of those in control of practically every large city in the United States, while the superintendents of a great many smaller cities as well are stressing interest in their instructions to teachers. The two quotations which follow are chosen at random and represent what might have been taken from any one of a hundred other sources.

"The English class admits the child to a world of beauty and new interests." Berkeley, California, Course of Study of the Intermediate Schools, Section on English.

"For the word artist, in its widest acceptation, means to me the man who takes pleasure in what he does. So it would be desirable were there artists in all trades — artist carpenters, happy in skillful raising of beam and

mortise, artist masons, spreading plaster with pleasure, artist carters, proud of caring for their horses, and of not running over those in the street. Is it not true that they would constitute an admirable society?" Quotation from Rodin, and given as the basis of art work in a report of the Kankakee, Illinois, public schools.

Practical Features

Practical Use Difficult. Anyone who has conscientiously tried to interest a group of live boys and girls knows that it is a many-sided problem. The student in the normal school is taught the "fundamental necessity" of interest in instruction and at the end of his methods course is fairly bubbling with enthusiasm to apply this new philosophy. He goes out to teach arithmetic, grammar, or whatever the subject may be and finds this "fundamental necessity" the most conspicuously and continuously absent of all teaching requisites. What shall he do?

Teachers Form Wrong Attitudes. It is to be feared that a large per cent of our teachers adopt one of two evils. One group soon sees the uselessness of training in pedagogy and ceases to attempt to use it, resorting to continued coercion, scolding, and prodding to obtain the desired results. The other group goes to the extreme of developing interest through continuous entertainment. In fact, some find difficulty in seeing anything in the interest idea aside from entertainment by the teacher. A young lady who was doing her practice teaching was

recently heard to say, "My training teacher continues to demand that the children be interested in their geography, and I fear I shall have nervous prostration if I have to keep that class interested much longer. I have tried field trips and found them interested, but not in the subject at hand. I have tried every method of conducting the class I can think of. I guess I shall have to stand on my ear for them to-day."

But the Teacher Must not Confuse Interest with Discipline. No teacher can hold the attention of a class day after day unless he is able to discipline them when the necessity arises. Requirements and coercion are necessary elements in teaching school even upon the interest basis, but they do not do away with the necessity of interest. Also the ability of the teacher to radiate inspiration, to hold the attention of the children through force of character is just as necessary. Interest should always help in disciplining a school, but other means may be necessary at times.

Knowledge of Children Fundamental. With both of these abilities stated as being essential in the successful teacher, we are ready to study the problems of teaching as they are related to the interests of the children. Here lies a rich field, and ample rewards will come to any teacher who enters it. Knowledge of the inner life of the pupils, or the lack of it, determines the majority of successes or failures in the teaching world to-day.

"I tremble," said Jean Paul Richter, "when I see some rough grown-up hand blundering with these tender

buds from childhood's garden, marring the bloom here and disturbing the delicacy of structure there."

In order not to go astray the teacher should have a clear understanding of interest before he attempts to apply it. He must consider such questions as its values, why he is applying it, its limits, and its many and sometimes contradictory phases. These working principles, as determined by successful practice, are outlined as follows:

1. **Interest Is Basic but Needs Adult Guidance.** The interests of the child are one of nature's provisions for his guidance. What is interesting to him is in a general sense likely to be good for him. It is to be kept in mind that he is not a piece of plastic clay depending upon the teacher for his formation. He is a creature with inner life, desires, and interests of his own. He is a product of the centuries, a creation of evolution, and he is still evolving. All his education is to be a process of inner reaction to external stimuli. Education is to emancipate his powers. It can create nothing within him. Inner reaction is always necessary in the learning of any truth or in the development of any ability.

Nature has also supplied the child with other means of guidance. He lives through a long period of immaturity, during which he is more or less feeble and plastic. He is made to be dependent upon parents, teachers, and society. One of his chief interests lies in his desire for human companionship, his need of adults, and his natural obedience to them. This fact does not conflict with the use of his interests in his development, but is one of the

most evident of those interests. Consider the following examples:

It will be found that most children are interested in all school work when they enter school, indicating that their natural tendencies are in harmony with learning. In refusing to work with these natural interests and guide rather than oppose them the school often develops a distaste in children for learning. Some statements of children on this point are:

"I like to read but not in school."

"I love flowers, but I don't like them the way they are used in nature study."

"I like to work with tools, but the work in manual training seems almost to suffocate me."

In the olden-time school the children were often not in accord with their work because their interests were not considered. Those who were the brightest and most capable were the ones who were often most out of harmony with their teachers. It would be safe to say that a majority of the successful men and women of the past century were not enthusiastic in their school work. Their success was achieved by work outside the school under the inspiration and direction of parents, relatives, or friends. Hegel, Napoleon, Thackeray, Browning, Byron, Darwin, Edison, Burbank, Spencer, the Stevensons, Mark Twain, Riley, Ruskin, Goethe, Cardinal Wiseman, and Chatterton, are names which could be used to head a list of successful persons who were not successful in school. The list, if completed and made to include those

who were fairly successful in life, would probably extend through the remainder of this book.

The modern school, however, is bending its energies to discover as early as possible the special interests of the child. When these are found, all the work of the school is related to them. Thackeray or Mark Twain would have reveled in the work as carried on in many modern schools, and school authorities would not be long in discovering and developing their special powers.

Illustrative Coöperation. The report of an eighth-grade teacher on guidance and interest properly combined is given below:

"H. was interested in art. He wanted to draw everything. His ability in the school subjects was fair.

"I decided to encourage his art. I told him that if he would get his school work at home he could take our study hour for art, and that I would get the criticisms of an artist on his pictures. The scheme worked from the beginning. His interest in the school tasks was better and in art and painting his progress was almost spectacular. I later allowed him to take the arithmetic period on days when we were having drill problems and explanations of problems which had been previously tried by the class, upon his promising to give special attention when he was there. It was understood that if he fell behind in the arithmetic he was to go back to the old way. He did not fall behind."

There is a practice in some cities of allowing a child to take a special subject which is interesting to him and

advance in this course as fast as he can regardless of his abilities in other lines. If he is especially interested in jewelry design, he may be allowed to continue with regular work in the sixth grade and take up special work in the high school. This is made a regular practice in many schools with the children who are over age.

Result of Ignoring Interest. A child of this type might have been given a wrong start in life by being forced to work upon the school tasks in which he was retarded. The following illustration is a common case:

Girl, age 15, in seventh grade. Has failed three times. Leaves school. Works in a laundry for five years. From the age of ten she had showed marked proficiency in art and in sewing. She was always happy when working at either of these. She continued to sew for herself, and now and then for others, until she was quite proficient. School authorities never paid any attention to her interests. After five years in the laundry she took up sewing in a department store. Gradually worked to the top during the ten years that followed. As she achieved one success after another, self-confidence, which had been lost in school, came back to her. She became known as one of the most capable employees of the store. Her interests in other fields increased.

It had taken fifteen years to overcome the false start the school had given her.

The first point in regard to interest is to utilize it but not follow it entirely in the work of the school. Wise guidance by adults must in no way be diminished, but

the test of the wisdom of this guidance is the amount of inner reaction and zeal for the work displayed by children.

2. Interest Leads to More Difficult Tasks. Interest in the normal child does not turn toward the easier tasks but involves hard work. Interest means more than just hard work, however. It means inner reaction to this work, causing the child to do his best not merely because he likes his teacher or is afraid of him. The pedagogy of interest urges continually the development of independence, self-realization, and will power (the inner force which drives the individual ahead without compulsion). It is never satisfied with the mere objective result, the completion of the task at hand, although this is, of course, essential; but it looks to the development of the inner life of the individual as a result of his activities.

Hard work, good work, interest, and happiness go together. The old proverb, "Of course I know what happiness is for I have done good work," lies at the base of the pedagogy of interest. Every child who is realizing his inner nature, his true self, is doing good hard work and enjoys it.

Illustrations of Hard Work as a Result of Interest. During the last four years I have collected many instances of children doing a great deal more than the school required. They solved more than the number of arithmetic problems assigned. They wrote compositions when not asked to do so and begged to take their readers home in order to master a difficult selection or finish an interesting one. A good method of teaching reading,

and especially upper-grade literature, is to study a new book by reading only half of it in class, making it as interesting as possible. Then permit the children to take the book home and finish it.

In the school at Greeley we found many of the children coming to school long before time to begin in the morning and staying in the evening as long as we would permit them to.

The following are typical illustrations:

Six eighth-grade girls dramatized one of their selections in literature. They met in the evenings after school, asked the teacher to help them, and worked much harder than they did in any of the regular lessons.

X came to school one morning with the multiplication tables all mastered. The grade in which he was working did not require more than the fours (2d grade). He had learned them at home in order to "surprise" his teacher.

A child wrote fifteen themes during a term when only ten were required.

A boy who was considered lazy in school worked hard every evening in a home garden and studied his regular lessons better than before as a result of the teacher calling attention to his garden and recognizing its importance.

Tom Sawyer made all sorts of disagreeable work enjoyable to his fellows by pretending that it was fun.

John Locke found that top spinning would become disagreeable to a child if presented in the same manner as his school work.

3. Use of Interest a Standard. Interest does not conflict with standardization but is a step beyond it. Where the standard is wrong, that is, when the standard set up by adults is not a real measure of the most desirable ends of education, it is to the child's interest to ignore the standard. The great movement for tests and standardization that is now going on is just the experimental beginning of a new scientific treatment of results in education. It goes hand in hand with the larger movements to study children. The leaders of this movement do not intend to ignore child interest any more than the child student intends to ignore objective results of teaching.

The teacher of to-morrow must know the standards of education as well as the interests of the children. Knowing both, he must harmonize them. The entire idea of standardization is centered in the problem of using the better schools as standards to which to bring up those that are not reaching children as they should. Tests and measurements are being developed to help in this work. The proper use of interest and the development of the better interests of children is one standard which may be universally applied, and which, if lacking, will prevent a school from taking its place among the better schools, no matter how many objective accomplishments its pupils may have.

In surveying a school the following tests for interest may be used:

1. What per cent of the children come early to school at mornings and noons?

2. Tabulate carefully just what they do at these times.

3. Ask each child to write down his ten favorite occupations, being sure to state that he is to include both those in school and those outside of the school. Study the influence of the school upon his choice of activity.

4. Ask every child to write down the calling he intends to follow when he becomes a man. Have him explain why he has chosen as he did.

5. What school subjects does he like best? Why? Which ones does he dislike most? Why?

6. What books does he read at home?

Get the extent of his reading.

Books may be classified as A, B, C, D, and E grade.

It will help a teacher to make such a survey at the beginning of a school year and again at the end of the year. In comparing the two he can, to some extent, discover the influence the year's work may have had upon the interests of the children. He is also furnished with data which may be worth a great deal in dealing with practically every problem which may arise in teaching all subjects and in the control of the school. A teacher who discovered that a child had a collection of butterflies at home made it the basis of a closer acquaintance with him. It furnished a concrete base for the transformation from an indifferent, troublesome attitude into one of active interest and coöperation.

4. **In Absence of Interest Requirements Are Necessary until Interest Can Be Developed.** In practicing the doctrine of interest one must admit that it is often neces-

sary to force a child into a task before he will become interested in it. There is sometimes an inertia to be overcome. This plan is legitimate only when its limits are realized. Too often the advocate of such methods uses them upon all occasions and continues to coerce all through his teaching. If a child continually rebels against his school work, something is wrong, and a study of his peculiarities, his home life, and his parents will often give a clew to the difficulty.

As an illustration of the development of an interest after a period of set requirements, let us consider the case of a boy in the lower grades who did not want to learn to read. The following is the teacher's report:

Sept. 28. J—— does not apply himself. His health is good, and his handwork is excellent, but any task such as reading, arithmetic, or spelling seems to develop a nervousness in him. He plays with his hands, the muscles of his face twitch, and his entire body seems to rebel when he is required to apply himself mentally.

Sept. 30. Decided, after trying my best and not being successful in interesting him, to require that he do the work assigned to the class each day, having him work during a part of the handwork period on his reading and arithmetic. Have not given up the idea of finally interesting him, however.

Oct. 5. He is interested in finishing his tasks so that he may have full time for handwork. He is showing some improvement.

Oct. 10. Was the best in the class to-day. I seized upon this opportunity and praised him highly.

Oct. 21. Is showing interest in the subject matter that is being read.

Throughout the remainder of the year his work was considered good enough not to necessitate special reports, and he was promoted. In the next grade his teacher kept him interested but did not require good work in the subjects that were hard for him. She encouraged his handwork and allowed him to remain idle during the reading period. When he was called upon, he did poorly and was reported as backward in this subject. At the end of the year he was much behind his class, but, since the rules of the school forbade failing a child for deficiency in only one subject, he was promoted.

His new teacher decided that she would make a special problem of him. She wrote a note to the parents asking them to come and confer with her. They came and she found them willing to coöperate. They reported that he never read at home, but that they would give him special practice for fifteen minutes each day in books selected by the teacher. Having discovered that he was interested in ships, the ocean, and wild animals, she selected "The Swiss Family Robinson," in a special edition of words of one syllable. This book was quite difficult for him. Following this the teacher and the parents kept before him the necessity of his learning to read and did everything they could to interest him. In all their work they did not scold or mistreat him on account of his backwardness. The mother soon reported that he was showing a marked interest in the story of The Swiss Family and a decided improvement in his school work was noted. In six weeks he was reading

widely and had become one of the best readers in his grade.

Summary

If a teacher keeps in mind the foregoing propositions, his practice of the doctrine of interest will surely produce good results, and he will be safe from running counter to other principles of education. For working convenience these propositions may be summarized as below: (1) that interest is the central guiding principle in the child's life, but that it must be subjected to adult guidance; (2) that interest requires hard work and is only a pseudo-interest if it turns to the easier tasks; (3) that its use should raise the standard of a school and bring larger and better results as measured by accepted standards; (4) that conflicting interests and apparent aptitudes to do wrong are a part of every child's make-up and must be dealt with in a helpful, far-sighted way; and (5) that it is often necessary to require a child to do what is good for him until such time as his interest may be developed, remembering never to cease attempting to interest him.

CHAPTER VI

A SCHOOL SUBJECT TAUGHT THROUGH INTERESTS

Children Interested in School Subjects. If properly presented, subjects taught in school are interesting to children. In order to develop them in an interesting way the teacher must relate them to the developing interests of the children, must never do anything to make them disagreeable, never make the accomplishment of a school task a punishment, and always insist upon and bring out the joy there is in doing profitable work well.

All subjects have some specially interesting features. These should be studied and brought to the front by the teacher. Let us consider the following illustrations:

Arithmetic. Many children are natural mathematicians. Whenever one is found the teacher should take special pains to keep the interest alive. Often by suggesting to the children that they might go ahead and learn a multiplication table, solve some advanced problems, or some like work, the teacher will find that children who have not been good at the regular work will take special interest and do surprisingly well. The best work is never accomplished until the development of the children is carefully investigated and their interests aroused.

Geography. When geography is made an acquaintance with the world and its life and connected with the everyday life of the child rather than a reading and reciting of facts from a book, most children find it a remarkably interesting subject. They are interested in primitive life, the way children in other countries live, in how their own clothes were made and brought to them, and, above everything else, in travel.

History. The knowledge of the development of peoples is a remarkably interesting subject. It must constantly be related to the child's own life at present. It must develop gradually from the purely individualistic into the social. It must constantly have the personal touch.

English Taught through Interests

As an illustration, an extended discussion of teaching English through interests is given here. That every normal child is interested in reading, speaking, and writing his mother tongue cannot be disputed. It is only when this work is made artificial that children object to it. The baby mumbles to himself and to any one else who will listen to him. Just as soon as he can wield a pencil, he wants to write. Just as soon as he learns to recognize a few letters, he wants to read them whenever he gets a chance, providing, of course, that some of his many other interests are not claiming his attention when a book is thrust upon him.

Poetry and Rhythm

The most fundamental expression of the language interest is that of reading, memorizing, and constructing poetry. Rhythm, and especially word and song rhythm, appeals to the child shortly after birth. Geneticists have pointed out that the world and solar systems, the seasons, and even the days come and go in rhythm. In the child is born the rhythm of the heart and respiratory organs, and the love of rhythm; his response to the soothing melody of the lullaby may be his first automatic harmonizing with nature. The mother's instinct to sing to her child and rock him is nothing more than her unconscious adaptation to his own rhythmical nature. The singing of the mother leads up to the nursery rhymes and Mother Goose stories which fit the nature of all normal children. When the child has become saturated with his Mother Goose, his literary education has gone far along its way. Most children in this period begin to construct verses of their own, and this is the beginning of literary composition. The child, like the race, begins, if he begins naturally, with composition in verse. His words come with the sway of his body or the patter of his feet or with the drumming of his hands.

Let us take for example a few rhymes collected by Norman Triplett in his observation of a little girl. Towards the age of three she began to make up rhymes. The first one was written down when she was just past her third year. Swinging her body as she hung to the bed post, she said:

"I wis' I were a baby,
And had a yittle scare,
I'd jump upon the bed,
And I wouldn't give a dare."

On seeing a worm she made up the following:

'Worm, worm, where have you been?
I have been to grow in the nice warm ground,
And I come to see you in a jaybenjay,
And a seebensee and a seebensay."

And with a bee for her subject, she broke out:

"Wets dance a yittle song
Said the yittle honey bee
I'm a pretty yittle songer."

* * * * * *

The next line was lost to the observer.

Triplett observes that this child and her rhymes is but an illustration of what the great mass of children are doing. This is especially true of those who have been brought up on the better grades of child literature.

Poetry in School Work. Throughout all the grades the average child is very fond of rhythm, alliteration, and the jingle of word accents. If in his school work they represent so much drudgery, most of the rhymes the child learns there are dropped as soon as he gets outside the door, although there are quantities of jingles that he would gladly learn if his teacher would only look at that side of his nature and allow him to do so. When the school has failed to furnish something worth while

to utilize this energy, the child usually expends it in singing some low-class rhythmic jumble, repeating to a droning tune something like the following:

"I know something and I won't tell
Three little niggers in a peanut shell."

or

"Mary is mad and I am glad," etc.

This does not entirely satisfy him, but since he does not have access to anything else, he sings away until he has sung the love for rhythm out of his soul, and it will be hard to revive it again.

Educational Values. If plenty of good material is supplied, the children will revel in it, will read widely, memorize, and if encouraged, will compose verses. Their reading is in this way furthered, their sense of appreciation developed, and a motive is supplied for composition and writing. The exercise in composition may take up all the rules of punctuation, capitalization, etc., that are taught in the regular language lessons. It is not difficult to get children to write, punctuate, and spell their very best in order to make their verses appear the best possible.

Reading and Memorizing Poems. In every grade an impetus will be given to reading and literature work if a large amount of good poetry occupies a definite place. Children should be encouraged to memorize as many selections as they will, each child being allowed to choose his own selections. The teacher should know the selec-

tions which he thinks will interest the class and should give them from memory as well as read them. Unless it is impossible to interest him in anything, a child should not be required to memorize. Many splendid poems are detested by the children because of enforced learning. We must constantly keep before us the idea that our purpose in teaching literature is to develop the child's natural interest in it and to lead this interest into new fields, developing an appreciation of the best literature. Memory work will not be successful until the children voluntarily carry it on. The teacher, of course, must give suggestions and make the recitation of memorized verses a regular part of the program. A child should never be required to memorize literature as a punishment.

The following list of books contains child poetry suitable for the first eight grades. The first ten furnish ample material and are preferred by the children.

R. L. Stevenson,	Child's Garden of Verses,	Rand, McNally & Company.
E. F. Betts,	Mother Goose, The Complete,	Stoker
Richards,	In My Nursery,	Little, Brown & Company.
Bellamy and Goodwin,	Open Sesame,	Ginn & Co.
Burt,	Poems Every Child Should Know,	Doubleday, Page & Co.
Patmore,	The Children's Garland of Verse,	Macmillan Co.

Chisholm,	The Golden Staircase,	Putnam's Sons.
Shute,	The Land of Song,	Silver, Burdett & Co.
Hazard,	Three Years with the Poets,	Houghton Mifflin Co.
Tower,	Gold Nuggets of Literature,	Education Publishing Company.
Lucas,	Book of Verse for Children,	Holt.
Repplier,	Book of Famous Verse,	Houghton Mifflin Co.
Whittier,	Child Life in Poetry,	Houghton Mifflin Co.
Wiggin and Smith,	Golden Numbers,	McClure.
Wheeler,	Mother Goose Rhymes,	Houghton Mifflin Co.
Norton,	Heart of Oak Books, 1 and 2,	Heath.
Field, Eugene,	Love Songs of Childhood,	Scribner's.
Henley,	Lyra Heroica,	Scribner's.
Bryant,	New Library of Poetry and Song.	
Lear, Edward,	Nonsense Book,	Little, Brown, & Co.
Wiggin and Smith,	Posy King,	Doubleday, Page & Co.
Matthews,	Poems of American Patriotism,	Scribner's.

Olcott,	Story-Telling Poems,	Houghton, Mifflin & Co.
Rossetti,	Sing Song,	Little, Brown, & Co.
Field, Eugene,	With Trumpet and Drum,	Scribner's.

Composition in Verse. Children from the second grade through the eighth respond very readily to the suggestion that they write verses. A verse composition period every two weeks stimulates interest and there is usually an oversupply of material. Each child may have his poetry book in which he saves his best verses. The room may have a book in which the best products of the class are written down. If it is saved from year to year, this book will prove interesting to new classes and will inspire them to do their best in order to leave a good record for the next class.

The following verses were taken from a fourth-grade book:

Night, beautiful night.
The Golden stars are shining
Against the blue satin lining.
The moon, whose face is so tender,
Has dressed in silvery splendor.

Oh, night, beautiful night,
Thy dress is silvery bright,
Shinest too thy silvery light,
Night, beautiful night.

Adrift, Adrift, Adrift, Afloat,
Baby sails in a silver boat,
Adrift, Adrift, Adrift, Afloat,

Slumbering in the peaceful night.
Slumbering under the stars so bright.
Soft, airy moonbeams float down
Alight on baby's snowy white gown.
Adrift, Adrift, Adrift, Afloat,
Baby sails in a silver boat.
Adrift, Adrift, Adrift, Afloat,
The stars are shining o'er her head,
While baby's asleep in her downy bed.

Be careful, be careful, says Kit to Kat,
The tree is very tall,
And you are very fat.
Be careful, be careful, oh, please don't fall.
It is very, very dark.
So please do be careful
It makes me so scareful.

Dip the little stars, O moon,
Dip them over the sky so soon,
Tell them ever to behave,
Tell them to be true and brave,
Dip the little stars, O moon,
Dip them over the sky so soon.

The sonnet given below was written by a high-school boy who had done considerable verse composition in the grades. It was written to illustrate the peculiar structure of the sonnet.

To Morning

O Rosy Dawn, when your first flushes pink
The East, then purple grow, then fade to blue,

And the great orb of light with golden hue
Shoots his ten thousand beamlets o'er day's brink,
And all the stars into oblivion sink;
When all the world is bathed in cooling dew,
And all the earth's creatures rise to life anew,
Man wakes, and from the cup of time doth drink.
O, who can tell what he shall drink to-day
Of sorrows or of joys ere night will come?
Perhaps he may be turned to lifeless clay,
And yet, he may reach fame, or foes o'ercome.
So, not on death he recks nor has a care.
Two sides of life he knows, but views the fair.

Special Advantages of Verse Composition in Grades

Increases the Amount of Writing. By utilizing the natural interest we secure opportunity for extensive exercise of all the powers that are involved in writing verses. The results in amount of written work done by the children are often many times that which is required in regular courses of study. Longfellow was not an exception when he wrote the jingle of "Mr. Finney's Turnip" during an hour of penance. The sonnet "To Morning" given for illustration was thought out by a boy who carried newspapers in the early morning. The people hurrying to their work, the sky as he watched it each morning, and the animals browsing in the fields appealed to him, and he philosophized with this sonnet as a result. But think of the powerful lever a natural interest may be when an upper-grade boy, hurrying through his task of delivering papers in the early morn-

ing while his teachers are still asleep, finds time to busy himself with a school task, and, even more important, one which he is not required to perform. Some verse books of certain fourth-grade children represent more composition in one term than is required of a college class in English composition for the same period.[1]

Exercise in English. The work should represent the best children can do in writing, spelling, rules of punctuation, capitalization, and correct usage. The interest in making verses is thus being used in teaching the regular work in English. In this work children often ask the teacher to furnish lessons in punctuation in order that they may be able to write their rhymes without making mistakes. The use of the dictionary is encouraged, and crudities in expression are commented upon by the class, the child who makes them being required to correct his work.

Concrete illustration of work in verse writing, eighth grade.

Teacher: This is our day for original poetry. What have you been writing during the last two weeks? (A 20-minute period every two weeks was given in this case.)

Several hands go up. Of twenty-seven children four have written nothing; several have written as many as six different poems. One girl is writing a "play."

Teacher: Our time is limited. Select your best verses and we will listen to as many as we have time for.

[1] This statement is made from comparisons of actual requirements.

A child reads a poem. The class criticizes it. Most of their criticisms are complimentary. Some, however, point out deficiencies which may be improved.

This is repeated until the period is over. The teacher asks the children to pass in their verses, written in regular form, in ink, and upon regulation composition paper. Those who do not have verses are required to pass in compositions.

These papers are marked and the criticisms of the teacher discussed at the next composition period.

Composition and Theme Writing

Must Be Approached from the Child's Standpoint. This often disagreeable part of English instruction is being vitalized and made interesting to children by being made an expression of their inner lives rather than a task laid on from the outside. They are led to want to write, this being the primary aim of English instruction. After the child wants to write, the task of getting him to want to write clearly and correctly is simplified. On the establishment of both of these desires on the part of the children, technical features are met and solved in a great deal less time than under the old method where the teacher spent all his time with the subject matter he had planned to teach, ignoring the necessity of first establishing a desire for it.

Children Are Naturally Interested in Writing. When one considers this work from the standpoint of the children, he finds that it is naturally interesting to them,

and that the teacher who reports his class " dead and disinterested " is usually the cause of the condition. Children delight to express themselves in writing when this work is made a vital part of their lives. In harmonizing this interest with the process of improving it the following principles have been found basic:

1. The subject matter of the class in composition must be primarily the subjects about which children write. The correction of errors is permissible only when children are constantly aware that they have something to express but realize that they have difficulty in expressing it in a manner to convey best their thoughts. The task is accomplished by holding a large part of the work to a discussion purely of subjects in which children are interested. Fluency and confidence thus precede and accompany the development of accuracy.

A classroom illustration: Seventh-grade teacher: " As we came to school this morning we noticed the beautiful hoar frost which covered the grass and the trees. I have heard you talking about it and am interested in your descriptions. I have heard some splendid uses of adjectives in your descriptions to each other. Wouldn't you like to try to describe some of the scenes or objects which appeared especially attractive to you? Let us talk them over first. Then as we write we will try to express ourselves in a manner that will as nearly as possible do justice to the picture we are trying to describe. Close your eyes and think of the appearance of the world covered with its glittering coat. It appealed to

me in a way that is beyond my power to express, and I know that some of you will think of words and sentences which will add materially to my own thoughts. Let us try to help each other appreciate this treat nature has given us."

The children volunteer descriptions of scenes. When they reach the point where they are all interested in doing their best to describe the morning, the teacher suggests that each write his description.

A further illustration: The teacher and class visit a house which is under construction, an orchard, a factory, a public building, a river, or some other place of special interest. The class recite to the teacher in the same manner as if the recitation were going on indoors. They try to find words which will do justice to the situation as they see it. This is followed by writing what they see.

Pictures, preferably prints of the great works of art, are brought into the schoolroom. The children singly and in groups attempt to pose the picture (posing is not profitable above the fifth grade). They interpret it as best they can. This is followed by an attempt to express in writing the feelings and thoughts the picture leaves with them.

2. Children must feel that what they write will be of vital interest to the teacher and to their fellows. Every opportunity must be used to let the children know that what they write means something to someone, aside from the fact that it affords an exercise in English. The teacher should refer in class to what has been said in com-

positions, and expect the theme writing to be looked upon by the children as a means of communication with their teacher and with each other. If a boy writes of a fishing trip, further questioning about his story will form a nucleus for closer relations with his life outside of school and will indicate that his teacher really notes what he has to say in his composition. This, in itself, will cause him to be more accurate. He soon learns that what he cannot tell his teacher orally may be fully and adequately expressed in written composition.

There is nothing more stimulating to good work in composition than the feeling that someone sympathizes with and wants to read what the child has to say. He learns then to pour out his joys, his sorrows, incidents of interest to him, his plans, ambitions, hopes, and fears. A teacher cannot hope to succeed in interesting a class unless he is interested in each child's individual life.

Oral English. In oral English the same procedure that has been indicated for written composition is necessary. We must first develop fluency and an interest in speaking before we can succeed in establishing accuracy in form. The methods that have just been outlined for written composition are being used, as well, in oral composition. When the child reaches the place where he is interested in his speaking and wants to use correct forms, he carries the work out of the schoolroom into his everyday life. No amount of technical schoolroom requirements can equal the development of this desire. It is impossible to get worth-while results in oral English

when only thirty minutes in twenty-four hours are devoted to it.

A boy in the fourth grade was heard to say, — "I don't say 'ain't ' in school because the teacher is so cranky, but y' betcher life I make up for it when I get outside." And in many schools the sentiment towards correct English is such that children who use it outside of classroom work are not popular with their associates. The attitude and methods of the teacher are to be blamed for this condition of affairs. The home or special community may be a partial cause, but no teacher can account for complete failure to arouse a better attitude towards correct usage by transferring the blame to the home. One of the first questions in surveying a teacher's work in English is, " Has he been able to establish a desire for and general use of good English, or do his personality and methods cause the children to dislike and suspect it? "

Story Telling. One of the best means of creating good oral English is story telling. It is being given a definite place in all grades, but a marked effort is being made to strengthen it in the upper grades because it has been found that as children grow older their love for good stories, well told, does not diminish, as was once thought, but increases.

The method in general use in the better schools is to give a definite place in the week's program to story telling. During this period the teacher and the children tell stories. They prepare for this hour by practicing their stories until they can tell them in good English and in a

way to interest the class. This method provides a regular period for the refinement of oral English. By preparing for it and relating it to the deep interest in stories which is a part of every child's nature, we provide an organized means for improvement. This method is much superior to the old way of merely correcting chance errors heard in the classroom. The teacher still continues to correct them wherever and whenever he finds it helpful to do so, but he does not rely entirely upon this means. When a child realizes that his story is appreciated more when he does not halt in speech, use the " run on " construction, or neglect tense and number, he has reasons of his own for learning to speak correctly. Children under these conditions often ask the teacher to correct them and point out the mistakes they tend to make.[1]

Interest in Literature

Somewhere between eight and fourteen years there may appear a stage in the child's life when he takes an interest in reading. He reads for his own pleasure and picks his own reading. As a rule he does not care for selections that his teachers have chosen for him, although a teacher who understands him may be able to direct his reading. This reading interest is usually not developed in the classroom, yet it is just as important as anything that may be accomplished in the classroom so far as

[1] A list of stories for each grade, with bibliographies, is furnished in a recent book by Cross & Statler, " Story Telling in the Upper Grades," Row, Peterson, and Co., Chicago.

English is concerned. But since it does not come under the course of study nor turn upon the books that are taught in the classroom, it is not always recognized in school. It has too often been our idea to develop an interest in books by a forced study of them, but such forced study usually kills all desire to read, see, or even hear about such books for the remainder of life.

The difference in results from the two methods — the first watching for the interest, feeding it, and striving to make it grow, the second expecting it to develop as the result of compulsory work and assigned tasks — cannot better be illustrated than by two examples. The first one is quite widely known; it is the story of how James Whitcomb Riley first read Ivanhoe, but it furnishes such an illuminating contrast to the second illustration, also concerning Ivanhoe, that both are given here; the two different attitudes with all their results can be portrayed in no clearer manner.

Riley said that he did not get along well in school. School did not appeal to him; the subjects were dull and uninteresting.

One Friday when he had broken most of the rules he was asked to stay after school. Instead of whipping him, the teacher took a copy of Ivanhoe from his desk, when everyone was gone, and read two chapters aloud from it.

Riley said that it made a deep impression upon him, and he asked to take the book home. For the next two days he read at every spare moment and finished the book. He became interested in reading other books and

points to this incident as the beginning of everything worth while in his career.

Bright boys and girls seem to be a great deal like Thackeray, who said, "I had a natural taste for every book that did not come in the school course."

Let us compare this incident in the life of Riley with the other Ivanhoe case. A high school freshman was told that there were two books which he must read in his freshman year for his English requirements. One of these was Ivanhoe. As soon as he heard of the book, his mind began to picture it as a ponderous volume full of "good English," which meant to him so much drudgery. As the year wore along he kept putting off his task, but he finally went to the library and found the book. Its cover at once verified all his suspicions. There it was, the heavy volume. Was there not some short cut? Down to the bookseller's he went, and there he found a treatise which, it was claimed, would furnish one with all the necessary facts for an examination on Ivanhoe. The little book was purchased and read. The examination time at last appeared, and, true to the claims of the advertiser, the boy was passed with a good grade on his knowledge of Ivanhoe.

"About six years later," he continues, "I was shut up in a small town with nothing to do or to read. As I searched the shelves of the village school for something that might be of interest, the old loathing was again awakened at finding a copy of Ivanhoe. With many misgivings I again started to read the book which had

been fought off so strenuously in high school. But as the pages went by, I found that I could not leave it.

"Since that time I have hunted up other books which had gone the way of the 'concise treatise,' David Copperfield, Silas Marner, and other treasures. In most cases I have had about the same awakening as occurred with Ivanhoe."

The amount and the type of reading a child is doing outside the requirements of the school is a good test of the efficiency of instruction in literature. When children develop a dislike for high class literature, the method of teaching it should be revised.

Importance of Forming a Habit of Independent Reading

Reading is a means of development which is open to everyone. An interest in reading has often made the difference between a common and a great man. Those who have had no other opportunities have educated themselves entirely through reading, and, on the other hand, those who have had the best of schooling find it hard to go far if they have not formed a taste for improving literature.

President Eliot of Harvard has said of the reading interest: "From the total training during childhood there should result in the child a taste for interesting and improving reading which should direct and inspire his subsequent intellectual life. That schooling which results in this taste for good reading, however unsystematic or eccentric this schooling may have been, has achieved a

main end of elementary education; and that schooling which does not result in implanting this permanent taste has failed. Guided and animated by this impulse to acquire knowledge and exercise his imagination through reading, the individual will continue to educate himself all through life. Without that deep-rooted impression he will soon cease to draw on the accumulated wisdom of the past and the new resources of the present, and as he grows older he will live in a mental atmosphere which is always growing thinner and emptier.

"Do we not all know many people who seem to live in a mental vacuum, — to whom, indeed, we have great difficulty in attributing immortality because they apparently have so little life except that of the body? Fifteen minutes a day of good reading would have given any one of this multitude a really human life. The uplifting of the democratic masses depends upon this implanting at school of a taste for good reading."

Almost every great man is a great reader. Very few can be found who do not point to their reading as an important factor in their development. Let us consider the value of a reading interest in the life of Thackeray. What is true of him is representative of what will be found in the biographies of most exceptional persons.

In his boyhood he went to three different schools, and did extremely poor work in all of them. All his life he was deeply disgusted with the English schoolmaster. He says, "I always had my doubts about the classics. When I saw a brute of a schoolmaster whose mind was as coarse as any ploughboy's

in Christendom, whose manners were the most insufferable of all heaven's creatures, whose lips, when they were not mumbling Greek and Latin, were yelling out the most brutal abuse of poor, cowering little gentlemen —. A man will slap you on the back, and call you names because you won't learn, but I never could take the proffered delicacy. The fingers that offered it were too dirty."

This picture is representative of his boyish experiences with schoolmasters. T. F. Boyes, one of his companions, says of him. "No one in those early days could have believed that there was very much work in him, or that he would ever rise to the top of any tree by climbing."

Thackeray's one passion seemed to be vested in reading novels. He says, "I had a natural taste for every book that did not fall into the school course." Even late in life he cherished the idea of retiring to the country and feasting on books.

He says the following of his first novel, "As some bells are ringing hard by, making a great holiday, clanging in the summer afternoon, I am reminded, somehow, of a July day years and years ago in a garden, and there was a great clanging of bells. I remember a little boy lying in that garden reading his first novel. It was called The Scottish Chiefs."

Reading has played a large rôle in the lives of successful men in all fields. It served as a foundation to the legal practice and public career of Lincoln. Edison says that he early learned to " tear the heart out of a book." A successful scientist recently said, " I believe that my spontaneous reading has educated me a thousand times as much as did my schooling."

The Development of the Reading Interest

Good Taste a Matter of Growth. A number of men who have acquired the reading habit say, when questioned, that they went through different stages of development in their choice of books. Some of them read hundreds of the five-cent paper-back, blood and thunder stories, such as Buffalo Bill, Tip Top Weeklies, Jesse James, Diamond Dick, and Nick Carter. They passed through this kind of reading like a traveler journeying through a country never to return again. Gradually they grew out of it, and ever afterwards such stories merely aroused their disgust. Girls go through the Augusta Jane Evans and Mary J. Holmes stage in somewhat the same manner.

Teachers and parents should learn that such reading does not always result in evil. A forced check to it often results in secrecy. One man says that he had hundreds of Jesse James stories hidden in the barn loft. Many gangs of boys circulated among their members all of these books they could get hold of.

A man whose reading taste is quite cultivated tells of its development in the following words:

"I graduated from five-cent Nick Carters to ten-cent novels; then I went to Sherlock Holmes, and next to the Edgar Allan Poe type of reading. This was at the age of ten or twelve (somewhat younger than ordinary). Soon my reading became a source of great delight, and at about thirteen I went into pseudo-psychological, scientific, and mystic works."

Later he read all the works of Herbert Spencer. Then he read Darwin, Pearson, and Hall. Finally he took up the study of eugenics and is now holding a responsible position as lecturer on this subject. His reading prepared him to gain a graduate degree at one of the greatest American universities, yet his schooling was not enough to give him the ordinary high school diploma.

Age of Beginning. The reading interest has usually started between the ages of nine and twelve. And although it may start earlier or later than this period, in those with whom it stays eleven is the age at which it most often begins. Statements of persons who have acquired the taste for good literature are given below:

1. "From about the age of ten I have been interested in books and reading. They have always held a kind of mystic charm for me. Whenever as a boy I saw a large case of books, I would be overcome by a feeling of reverence and awe. This reading interest was started at home. My father and mother used to read to each other and talk about the books they had read. Their reading fascinated me, and I began to read for myself."

2. "My interest in books started when I was about eleven years old. Previously I had followed mechanical pursuits, but several causes, among them a teacher who had become a companion to me, led me to develop an interest in reading. At that time I traded a lathe — I had saved for years to get the money to buy it — for a set of encyclopedias."

3. "At the time my brothers were hunting and fishing I turned to books. My mother noted this and supplied me with all the books she could afford. I never cared for outdoor sports much after that. At present my chief delight is in reading."

Developing Interest in Literature at School

Morning Exercises. At morning exercises it is a good custom to read selections from different authors, — as Kipling, Burns, Tennyson, and others. When the children are interested, the teacher may announce that the book from which he has read will be on his desk, and that those who wish may borrow it. If the teacher has chosen wisely, the book is likely to be read by a large portion of the class.

Regular School Period. One of the best methods of stimulating this interest is to give a school period a week to it. The regular English lesson for that day is a discussion of the books that have been read during the week. The results are apt to justify all the school time spent in this manner. It makes a most interesting period to the children, and the descriptions of books lead others to read them.

There is a great difference between individuals. These differences between individuals are to be enlarged upon rather than blotted out. We could not overcome them if we wished, and we should not wish to. Undoubtedly, the person who is interested gets more than the one who isn't; but that is life. We have ignored individual in-

terests too long in our schools in attempts to bring the backward child up to a plane that he himself cares nothing about coming up to; and in doing it we have ruined interests which might have been developed far beyond any school requirements.

Someone has taken the trouble to investigate how long it would take an ordinary high school boy to read all the books covered in the regular literature of the first eight grades. The time it took him was pitifully short. Below is given an illustration of what an eighth-grade boy did in one half-year under the plan of one period a week spent on what the children were reading outside of class with free discussion among the children. The books were read by a boy who was about average in a class of twenty.

Books and magazine articles read by an eighth-grade boy, September 1 to January 30:

BOOKS	MAGAZINES
By William A.:	
1. A West Point Cadet, Capt. Malone.	1. Seven Numbers of American Boy
2. A West Point Lieutenant, Capt. Malone.	
3. A Texas Blue Bonnet, Emilia Elliott.	
4. Blue Bonnet's Ranch Party, Emilia Elliott.	
5. Two Ways of Becoming a Hunter, Harry Castleman.	
6. The Missing Pocket Book, Harry Castleman.	

BOOKS

7. The Haunted Mine,
   Harry Castleman.
8. Elam Storm,
   Harry Castleman.
9. Frontier Boys in the Grand Canyon,
   Theodore Roosevelt.
10. Frontier Boys in Colorado,
    Theodore Roosevelt.
11. Winning His Y,
    Barbour.
12. Whispering Smith,
    Spearman.
13. Captain Chub,
    Barbour.
14. Crimson Sweater,
    Barbour.
15. Williams at West Point,
    Hugh Johnson.
16. Last of the Mohicans,
    James Fenimore Cooper.

The teacher should keep a record of the books that are preferred by the children. Then from time to time he can make lists and post them for those who wish to read interesting books. The lists posted should contain only good literature. It will be noted that some of the books reported in the list given are not what may be called "A" class. The teacher must be careful not to attempt to force taste, and although he should not refer them to lower class literature, he need not rail against it. The

taste for good literature is developed by surrounding children with high-class books suited to their interests. When they get to where they choose Kipling, Dickens, Alcott, and like authors of their own accord, the end is achieved.

A list of authors whose books are both interesting to children and excellent literature is furnished here for those who find difficulty in selecting books to meet the two requirements. The number of children's books written by an author is placed after his name, but the numbers do not include all the books by an author.

Adams, Joseph, 2
Alcott, Louisa May, 16
Aldrich, Thomas Bailey, 21
Andersen, Hans Christian, 5
Andrews, Jane, 5
Baldwin, James, 6
Barnes, James
Beard, Daniel Carter, 4
Beard, Lina, 2
Blaisdell, A. F., 4
Blaisdell, M. F., 2
Blackmore, Richard D.
Blanchard, Amy
Boyesen, Hjalmar, 2
Brooks, Elbridge Streeter, 5
Bunyan, John
Burroughs, John, 3
Butterworth, Hezekiah, 2
Cervantes, Miguel de
Chapin, Anna Alice, 3
Chubb, Percival, 2
Clemens, Samuel L.+
(Mark Twain)
Coffin, C. C., 5
Cooper, James Fenimore, 2
Cross, Mary A. E.
(George Eliot)
Custer, Elizabeth B.
Dana, Richard Henry
De Foe, Daniel
Dickens, Charles +
Dodge, May, 3
Dodgson, Charles L.
Dopp, Katherine E.+
Du Chaillu, Paul
Eggleston, Edward, 3
Ewing, Julia, 5
Field, Eugene, 2
Foote, Anna, 2
Gordon, Chas. W.

Grimm, J. L. and W. C., 3
Hale, Lucretia P., 2
Hale, Edward Everett, 8
Harris, Joel C., 5
Howells, William Dean, 3
Hughes, Thomas
Jewett, Sarah, 3
Johnston, Annie F.
Kaler, James Otis, 2
Kingsley, Charles, 2
Kipling, Rudyard, 6
Knox, Thomas Wallace
Lagerlöf, Selma
Lang, Andrew (Editor), 3
Long, William J., 5
Mabie, Hamilton W., 5
McDonald, Etta, 8
MacDonald, George, 3
Malory, Sir Thomas, 2
Miller, Joaquin
Mitchell, S. Weir
Moores, Charles W., 2
Morley, Margaret W., 6
Nicolay, Helen
Page, Thomas Nelson, 3
Parkman, Francis, 2
Porter, Jane
Pyle, Howard, 6
Ramée, Louise de la
Richards, Laura E., 4
Riley, James Whitcomb +
Roberts, Charles G. D., 2
Roosevelt, Theodore +
Saunders, Marshall
Scott, Sir Walter +
Scudder, Horace, 4
Seawell, Molly E., 4
Seton, Ernest Thompson, 7
Spyri, Johanna, 3
Stevenson, Robert L.+
Stockton, Francis R., 4
Stoddard, William Q., 2
Stowe, Harriet B.
Stuart, Ruth McEnery, 2
Swift, Jonathan
Tappan, Eva March +
Taylor, Bayard
Tomlinson, Everett
Verne, Jules
Warner, Charles Dudley, 2
Weed, Clarence M., 4
Whitney, Adeline, 3
Wiggin, Kate Douglas, 5
Wiggin, Kate Douglas and Archibald N., 5
Wilkins, Mary Eleanor, 3
Wright, Henrietta C., 2
Wright, Mabel O.
Wyss, Johann
Yonge, Charlotte Mary, 3

CHAPTER VII

UTILIZING A COMMON INTEREST

Illustrations of Interests which May Be Used as Incentives

The Social Interests. The desire to do better work when others are present, the interest in coöperation, competition, etc., furnish incentives for good work in school. These have been given detailed consideration in the last three chapters of this book.

Interest in the Opposite Sex. This plays a part in every phase of life and becomes of greater importance as the children increase in age. The teacher cannot afford to ignore it. The old method of prohibition of every interest in each other by boys and girls did not succeed. Whether this interest will become an uplifting influence in the life of a child or a degrading one will depend upon how it is dealt with. Many boys as well as girls are stimulated to successful effort by it.

Interest in Investigation. This has been made a large factor in instruction by all successful teachers. Froebel in " The Boyhood of Man " tells us that it is a mistake not to select our subject matter with this interest in view, for, he says, when it is neglected, a valuable feature of the child's nature is likely to suffer for want of function. He mentions the study of botany as an example. When

the child is not encouraged to investigate flowers until he gets into high school, the time is likely to have passed when he can become interested in this study. We must seize upon this interest whenever it appears and give due recognition for independent investigation in any subject at any time.

The Dramatic Interest

The dramatic interest has been chosen for detailed treatment in this chapter because it is receiving a great deal of attention in modern practice. It has been used with the greatest success in such schools as the Francis Parker School and the Speyer School.

The tendency to express our thoughts and feelings not only in language but through gesture and bodily attitude is common to the race. Hall and some of his students have studied the dramatic instinct and have fairly well established its racial character.[1] It finds expression all through life and is not confined to any one period.

Use and Misuse

Dramatization furnishes a splendid medium for the interesting study of school tasks. Its benefits will depend upon how wisely it is used. The dramatic instinct is not used as much as it should be in the average school, but in some schools it is much overdone and not organized to advantage.

The advantages of a wise use of this interest are:

[1] Curtis. The Dramatic Instinct. Houghton Mifflin Co.

1. The child's natural love for full bodily expression is utilized in making school life and unpleasant duties less irksome.

2. The more bodily expression we have in school, the less children will suffer through enforced confinement. The dramatic is a step toward a less sedentary program. The large values of this new tendency are given in a special chapter in this book.

3. The natural emotional life of children is given opportunity for proper expression. The feelings are being given more attention in education than heretofore, and, as the basic element of mental life, they deserve it. There is purification in proper emotional expression, and when children have opportunity for such, they are likely to be more wholesome in their reaction towards the mechanical side of school work and in their lives outside of school.

4. Facts are better remembered when experienced in this manner. The lesson is expressed more fully than reading and ordinary recitation could bring about; the mind is ready and eager for the work; and more repetition under concentrated attention may be demanded. These are special features of economic learning as established by psychological experiments, — full expression by the learner, a slight emotional state to give the attention an edge, and constant repetition.

5. A motive for special preparation is furnished. The child is to give his interpretation of a chosen piece of history, civics, or literature to his fellows. This brings

up a real life situation. Beyond the result in the teacher's grade book is the reception of his work by his fellows. This feature alone is full justification for large use of the dramatic. The more life motives and actual life experiences we bring into school the better will be the results of education.

Some disadvantages due to misuse are:

1. Overstimulation and lack of effort. Children often become overstimulated and take merely a superficial attitude toward their work. The teacher may do too much of the work for them and not demand study and thoughtful reactions. Classes in serious work may thus drift into a continuous discussion of how to write plays, and too much time will be spent in dramatizing and acting parts of the work to be covered while other more important parts are neglected.

2. Too much dramatization. Too much dramatization, even though carefully selected and well organized, is possible. This is only one of a large number of life interests and it can be overworked.

Dramatizing History

In the lower grades most of the history work is taught through action. Thus, little need be said about such work before the fourth grade. In the study of primitive life the children build huts or wigwams, make pottery, weave baskets, make bows and arrows, and act as wild men act while they are studying these men. In some places the children go so far as to form communities

out of doors and carry on the different occupations of the community in their childish dramatic interpretation.

But as we go upward through the grades there is more and more "seat work." Teachers seem to think that the children have passed the time when they desire to express in action what they learn, and that the time has now come to learn merely to recite.

A child learns of the adventures of John Smith of Virginia from his book, tells it to his teacher, and then is supposed to know it. He is given no chance to put himself into the life of the time through making a play of the exploits of Smith, and then realizing his fundamental instinctive nature by acting it. His final meeting with Smith is probably in the examination, where his old friend is brought forth to remind him of his inability to memorize the contents of a textbook. As the classes are usually conducted, only the most striking events in Smith's career, if we continue with Smith as a type, are learned; nor can we expect anything more to be learned.

The many little incidents and settings that go along with these more striking things and make up the real history of the people under consideration, their customs, their worries, and their methods of seeking pleasure are rarely felt by children who study history through recitations and examinations only. A dramatization of one of the many features in the life of Smith given at the close of the study of this section of American history reveals many facts which otherwise would not have been noted,

and which along with many of the things already learned are clinched in the minds of the children. At the close of the work interest culminates in the play, which may be given to the entire school. The usual dull review which is to be followed by a test cannot be compared with the dramatic review.

For an example of this sort of work, a play that was composed and written by sixth-grade children under the guidance and help of a teacher is given on page 148, to indicate what may be expected of an average group in this grade. It is by no means the best sixth-grade product that could be shown. It is regarded as valuable because it is average. It is presented to emphasize the point that most teachers can do dramatic work with their children. The more work of this kind that is done, the easier it will become.

Method of Constructing. The method of constructing a play will depend upon the previous training and experience of the children. If they have not had much experience in dramatizing, the teacher may lead them by suggesting a plot and characters. The pupils then give their ideas of what should be included, but the teacher is the judge of what shall eventually go into the play. Each member of the class keeps a record of the play as it progresses, and each one is supposed to study his history in order to be able to throw light upon any character or any speech he is to make. Such considerations as whether or not a character would make the speeches that are proposed, reckoning from his personal char-

acter, his interests, his place in history, and the customs of his times, may furnish material for profitable discussions. Real thought is called for by this kind of history work, and careful study usually accompanies the construction of a play if the teacher works to stimulate it.

The teacher must not be overcritical. A sensitive child is likely to withdraw from participation in the discussion if his notions are not given due respect. Sometimes it is even better to use a speech or direction of an inferior type in order to make the play representative of the entire class. Anyone knows that the teacher should be able to write a better play than the class could work out. But a finished play is the last thing that is to be sought in this kind of work. Children care for macrocosms, not microcosms, and everyone who views children's productions should understand this. As children continue with such work they show wonderful improvement.

If the class is fairly good in English composition and has had some dramatic work, the teacher may allow each child to write a portion of the play each day for his history and English work. This can be done more quickly and with better results, if the class as a whole decides upon characters that are to be represented, and also if the general structure of the play is first settled upon. Then the teacher can go over them, select the best plays, and read them to the class. Something from the work of each child should, if at all possible, be chosen. The class may then decide upon some of the special speeches and settings. After the teacher and the class have

chosen the characters and those who are to play the parts, each character may be allowed to work over his part, and if there is anything that he thinks he could better from the standpoint of the correct interpretation of the character he is to play, he should be allowed to state his position, and if it is good, he should be allowed to change the speeches or settings that are not suitable. Children who have had much practice are able to work out the parts of characters, and these can then be worked together by the class.

CAPTAIN JOHN SMITH

This play was written and given by the children of the sixth grade under the direction of the practice teacher, Miss Anna B. Davis,[1] Training School, State Teachers College of Colorado.

Scene 1.

Setting: Landing scene in Virginia.

Characters: Smith, Gosnold, two guides, several men, captain of the ship, Father Newport, few Indians.

Scenery: Rocks, chest, charter, chains, flag of England, costumes.

(Captain and all his men enter. Smith follows led by two guides.
Indians peek behind trees).

Smith — Captain, now that we are off the ships, may I be released?

Captain (gruffly) Release Smith. Now bring forth the chest, Gosnold, with the charter.

(Chest is brought, opened by captain, and he hands the charter to father Newport.)

[1] Under the training teacher, Miss Amy Foote, an American History play is given each year. The punctuation, capitalization, and spelling of these illustrations are those of the children.

Captain — We will let Father Newport read the charter.

Father Newport reads — I, the sovereign power of England, grant to you, my people, all the privileges of free persons, native of England, in such a manner as if you were born and personally resident in said realm of England, and you shall have a government according to such laws as shall be by myself or you established; so that the said laws conform or agree as nearly as possible with those of England, and do not oppose the Christian faith, or in any way withdraw the people in those lands from our allegiance. For carrying out these laws for the sovereign power of England, I do appoint from among you colonists the following: Gosnold as governor, Winfield, Ratcliff, and Smith as subject to his rule. These above mentioned men shall govern the colony of Virginia in accordance with the laws above stated.

Signed: King James I, of England.

(All salute Gosnold as governor).

Captain — This would be a lovely place for a settlement.

Gosnold — What are those funny brown people behind the trees looking for?

(Indians always peeping from behind trees).

Ratcliff — Trees are plentiful for building, and, indeed, there is a fine stream. This is an ideal place for a settlement. What say you governor?

Captain — I say let us have Gosnold plant the flag.

(Gosnold takes the flag to center of stage; all surround him and kneel to the flag).

Gosnold — I, governor of Virginia, take possession of this land for our king, James of England. The settlement shall be called Jamestown in honor of that great sovereign.

Father Newport — Aye, Aye.

(Crosses himself and all bow heads).

Curtain.

Scene 2.

Setting: Powhatan's settlement.

Characters: Pocahontas, Indian maidens, Powhatan, Indian braves, Smith.

Scenery: Trees, wigwam, corn, clubs, stones, log, skins, blankets, costumes.

(Powhatan is seated on a log with Indian braves gathered around him. Pocahontas is seated at the side of the stage with Indian maidens around her. As the curtain goes up, loud yelling is heard off the stage, and all turn in that direction. Smith is brought in by the Indians. He is bound in ropes.)

First Indian — (To Powhatan) Captured heap big pale face medicine man. Know too much.

Second Indian — Talk to stars. (points) Much wise pale face.

First Indian — Capture one. Kill two.

Second Indian — What do with him?

Indian maidens show much curiosity.

Powhatan (grunts) — Hold council to see if pale face live or die. (Powhatan and his men go to one side to hold council). (Smith is noticing Pocahontas who now comes up to him).

Smith —(Giving Pocahontas a mirror) Here is something for you my pretty maiden.

Pocahontas doesn't seem to know how to handle it. Smith shows her how to look into it. Then she shows it to the other Indian girls.

Pocahontas — Any more for Pocahontas?

Smith — Yes, here are some beads for you.

(These she also gives to other Indian Maidens.)

Pocahontas —(Returning to Smith) Tell Pocahontas where pale face came from.

Smith —(Sitting beside Pocahontas) I came from a land far across the great sea. It is called England. One time when I was a little boy, I wanted to go and fight for my country. I had to fight a tribe called the Turks. These people were mean and cruel and our fight was hard. While there, I was chosen by our side to fight one of these Turks by myself. I killed him and likewise two others, who attempted the same thing. At last we were taken as prisoners and sold into slavery. My master was mean and cruel, but I finally escaped and returned

home. When I reached England, a crowd of men were going to come to this country. We landed near here and made a settlement we called Jamestown in honor of our —

(Powhatan and braves come over hurriedly).

Powhatan — Pale face knows too much. Heap bad. Must die. I hold war dance.

(All Indians except Pocahontas and Powhatan dance around Smith).

Pocahontas — (Kneeling before her father) Save pale face for Pocahontas.

Powhatan — No, Away, bring clubs and stone. Pale face must die.

(Stone and clubs are brought and Smith's head is placed on stone).

Pocahontas — (quickly kneeling before Powhatan) No kill good pale face. Pocahontas no want you to.

Powhatan — Why?

Pocahontas — He gave Pocahontas this, (shows mirror) and this (shows beads).

Powhatan — No, Pale face must die. Away, Pocahontas. Strike.

Pocahontas — (Bending over Smith and sheltering him from the upraised clubs) No kill him. Pocahontas like him. Heap good Pale face.

Powhatan — Away braves. (Leads Pocahontas forward.) Pocahontas, you are my brave little daughter.

Smith — (Who has been unbound) (Placing his hand on Pocahontas' head) God bless you child; God save you for this brave act. You are a heroine.

Curtain.

Scene 3

Setting: Jamestown, Virginia.

Characters: Maidens, Pocahontas, Smith, Settlers, Rolfe, Powhatan, Indian braves, Ratcliff, Winfield.

Scenery: Chairs, benches, flags, inside of a house.

Smith — It is about time, Father Newport, that the maidens were arriving from England.

Ratcliff — Ah, you weary me talking about those maidens from England. They are always on your mind.

Winfield — Yes, I do say. Let's go fishing, Smith. I wonder where Rolfe is.

Ratcliff — I wouldn't wonder if he hadn't gone fishing himself. (Rolfe enters by back door).

Winfield — Hello, Rolfe, we were just speaking of you. Where have you been?

Rolfe — I have been to the ships. Here are some letters from England.

Ratcliff — Have the ships arrived?

Rolfe — Yes, just this moment.

Smith — I told you so, and here come Father Newport and the Maidens now. Welcome to you all.
(Father Newport and maidens enter. Among the latter are Miss Betsy, Miss Katheryn, Miss Molly.)

Father Newport — Captain Smith, this is Miss Betsy. (Betsy courtesies.) Captain Smith this is Miss Katheryn. Captain Smith this is Miss Molly. Sir John Rolfe this is Miss Betsy, Miss Molly, and Miss Katheryn. (All courtesy).

Betsy —We had a lovely trip but it seemed so long before we reached our settlement.

Pocahontas — (Comes in hurriedly and runs up to Smith) Ah, Pale Face Smith, the Indians are coming, and I fear they are going to kill us. Kill me too? Hide Pocahontas.

Rolfe — May I hide Pocahontas?

Smith — Yes, but be careful.

Katheryn — Oh, here come some horrid Indians.
(Men get their guns.)

Smith — No, Men, put down your guns. We will greet them as friends.
(Powhatan and braves enter.)

Smith — Why, Friend Powhatan, what is the meaning of this? Are we not friends?

Powhatan — Heap big Pale face, afraid you take lands from me.

Smith — No, indeed. We have a crown for you from King James of England. Bring the crown men.

Powhatan — Crown for me?

Smith — Yes, and here it is. Kneel now Powhatan.

Powhatan — I no like to kneel.
(Men push Powhatan down on his knees).

Smith — (Placing crown upon his head) Just a fit? Now you are king of Virginia.

Powhatan — (Rising) Heaps good pale face men.

Smith — (Grasping Powhatan's hand) Let us be friends from now on in this new world.

Curtain.
The End.

A history play should be as true to life as it is possible to make it, and the children should get their material from real history whenever it is available. The children could not get a copy of the charter for this play, although they made a good search. They went over a number of books and undoubtedly learned much from such work. They did find copies of other charters, and the clauses in their play charter were made with the knowledge of how other charters read. In Smith's story of his former life the experiences that he related to Pocahontas were based upon the "Life of John Smith," but his giving of presents and the entire conversation were imagined by the children. They felt as if Smith had given her something in order to win her sympathies. Such reasoning will compare well with discussions in college classes as

to what certain characters in fiction said and did when the author does not state. Take, for example, the discussion of whether Portia in the " Merchant of Venice " meant to give Bassanio a hint of the right casket in the little song that the players gave while he was choosing. If such discussions are valuable in the study of fiction by advanced classes, they are decidedly so in the study of history by sixth-grade pupils.

In presenting their play, the individuality of the children was allowed full realization. In criticizing, no definite directions about how to play a part were given by the teacher, but the child was told to think just how the character he was interpreting would act on the occasion in question. The scenery, costumes, and stage management were all taken care of by the children, a stage manager having been selected from among them. The teacher often gave him suggestions, but stayed in the background as much as possible. All this will depend upon the versatility of the pupils and their experience. All announcements to the audience should be made by a stage manager. The teacher should work towards entire management by the class, but this cannot be expected too soon.

English

The value of all this work to the English of the student cannot be estimated. Every pupil keeps a record of the play as it progresses each day. His copy should be in good penmanship, and the punctuation should be an

example of his best. The large amount of punctuation in writing a play makes a very valuable exercise in this field, and its value is due largely to the fact that it is not "punctuation for punctuation's sake" or "just punctuation study," but the child has his very real life reason for the use of punctuation in his play. He has a motive for it. The same is true for spelling and capitalization.

The work of making up the speeches of the different characters has a value added to that of ordinary composition, for here the study of, and an insight into, human character is necessary in order to conceive what a speech is to be. The children soon learn that each play has its funny person, its villain, its hero, and its heroine. They also take greater interest in and have greater insight into the significance of plays that are studied in literature after having constructed a few themselves.

Children can usually be prevailed upon to make the English in their plays an example of their best, but the teacher must be careful in this and stop before the interest has been killed on account of her too critical attitude towards structure. Improvement will be more likely to result as evolution rather than revolution. After long practice, if continued attention is given to this side of the work, the child shows great improvement. It is well to allow him the opportunity to construct beyond his ability to reach perfection.

Another great advantage that arises from the construction of their own plays is the increased confidence that it gives children. When a child realizes that he

can make a play that is appreciated by an audience and that such work is not the product of geniuses or wizards, his enthusiasm to do original work is likely to increase. Children write long plays outside of regular class work and bring them to class to consult with their teachers. Recently in our school a group of children found their own subject and asked the teacher to help them with it outside of the regular school sessions, volunteering to spend an hour a day until they were ready to play it. This illustrates the highest aim of education, as has been mentioned before. Whenever a child shows a desire to do such work, the teacher should note it and give him due recognition. A girl in the eighth grade read at home a large number of the plays of Shakespeare after being started in this manner.

A dramatization of Rip Van Winkle is given as representative of such work in English. The children began this story with the knowledge that they could dramatize it if they desired to. As they neared the end of the study each one wrote out an entire dramatization of the story. The eighteen little plays from which this one was made are now on file. The best ones were selected and some of them were read to the class. The final product represents a combination of the work of every student in the class. When such a story is dramatized and played, it goes into the hearts of the children and will never be entirely forgotten. The child's consciousness that he is actually representing a character causes him to feel the position of that character more strongly than any amount

of reading would. The piece becomes a part of him and he a part of it.

DRAMATIZATION OF RIP VAN WINKLE

This was done by an eighth grade.

Act 1, Scene 1.

Scenery. The home of Rip Van Winkle, a very neat place, with a table in the middle of the room and chairs around. A fire place at one side. As the curtain goes up, we see Rip talking to his dog.

Rip. — Poor Wolf, we have a hard time of it.
(Enter Dame Van Winkle).

Dame — (Sweeping floor) Idle again you lazy man. Why are you not out in the garden working? You sit around from morning till night and what you do amounts to absolutely nothing. I'd be ashamed of myself if I were as lazy as you.
(She chases Rip out, threatening him with the broom).

Rip — (as he goes out) Guess I'll take a stroll down to the tavern where I can have a jolly time with friends.
(Dame Van Winkle goes to empty cupboard and sighs as she goes out)
(Enter children, who chase around and knock down chairs, and Dame Van Winkle comes in and shakes the boy)

Dame — Now young man you pick up that chair.

Boy — Oh, mother's so cross. She is scolding all the time.

Girl — Yes, and poor Papa, he never does have a good time at home.
(Enter Dame Van Winkle going to cupboard)

Boy — Say, Ma, may I have a piece of bread?

Dame — No, there isn't any, and your father is too lazy to go out and work for any. Now you children get out of here and get to work in the garden.

Curtain.

Act 1. Scene 2.

Scenery. Before the King George Inn, with a tree to one side. At the door of the inn stands the inn keeper. Under the tree are chairs upon which are seated Dutch farmers talking about their crops.

Inn Keeper — (Filling cups with Ale) Well, I see there was quite a frost last night. You fellows got your crops all in?

Brom Dutcher — Yah, I tell you vot, I got mine all right. But Rip, I tell you vot, the frost his all got.

Nicholas Veder —Yes, I know Rip didn't get his in because he has been helping me.

Brom Dutcher — Vell, Vell, here he comes now.
(Rip enters looking downcast but when he sees his friends, brightens)

Van Bummel — Come on, come on, Rip, and join us.

Rip — (Drinking Ale) Well, Brom Dutcher, how goes the work in the field? Need any help?

Everyone — What about your own crops, Rip? (Laughter)

Rip — (leaning back in his chair) Well, as I was saying —
Enter Dame Van Winkle.

Dame — Here you are, lazy man, you loaf here at the tavern and never turn your hand to do a thing useful. Here it frosted last night and the pumpkins are all spoiled. Our fence is down, and the cow has gone. Oh, if I had my broom.
(Waves her hands and chases Rip out)

Dame —(turning to inn keeper) Well, what are you smiling about. You are the very cause of Rip's laziness. Oh, if I only had my faithful broom.
(Exit Dame Van Winkle.)
(As Curtain goes down, the men shake their heads and say, "Poor Rip")

Scene 3, Act 1.

Scenery. Rip going up the mountain with his dog and gun.

Rip — Well, it is getting pretty late. I must be going home.

Voice — (In hollow drawnout tone) R-i-p V-a-n W-i-n-k-l-e, R-i-p V-a-n W-i-n-k-l-e,
(Rip looks around but sees nothing)

Voice — R-i-p V-a-n W-i-n-k-l-e.

(Enter little man with keg on his shoulder and he motions Rip to come and help him)

Rip — Why, that must be one of the villagers. I will go and help him.

(Rip and little man carry keg across stage. Curtain drops quickly, and then rises, and we see little men playing ten pins. Enter little man and Rip.)

Rip. My but that was a heavy keg.
(Little men motion for Rip to pour them some ale. Rip obeys and while they are playing he drinks, until he falls asleep.)

Curtain.

Scene 4, Act 1.

Scenery. The tavern scene with Dutch farmers, discussing the disappearance of Rip.

Inn keeper — Wonder where Rip has been keeping himself. I haven't seen him for two or three days. My how I miss him. He's such a jolly old chap.

Farmer Jones — E's promised to 'elp me in my cornfield, but I 'avn't seen him this week. E's so obligin'.

Another Farmer — Kind o' thought he would be around to help me with the pumpkins, but he hasn't showed up this week. I surely miss the old fellow.

Van Bummel — (laughing) Wonder if his wife scared him out. (everyone laughs) Poor old fellow. He has a hard time of it and all the children of the village look lost without him.
(Enter Dame, peering about her)

Dame — What have you lazy fellows done with my husband? He hasn't been home for three days, and the fields are all going to waste.

Inn keeper — Don't know, Ma'am, hasn't been around here.

Nicholas Vedder — I saw him going hunting with his companion, Wolf.

Dame — Yes, but the old cur came home.

Van Bummel — Perhaps he shot himself. I'll go and see if I can't find him.

Farmer Jones — The Indians might have carried him away.

Dame — Shot himself, Indians, indeed. Oh, he'll be home to get something to eat.
(Exit Dame)

Inn keeper — I wonder where Rip is.
(As curtain goes down Rip's friends shake their heads.)

Act 5, Scene 1.

Scenery, a mountain scene. As curtain goes up we see Rip asleep on dry leaves.

(Rip lies asleep for awhile then stirs and wakes up.)

Rip — (rubbing his eyes) Have I been asleep all night? (arises) What will Dame Van Winkle say? Wolf, Wolf, Wolf, (Whistles) Oh, he'll be back pretty soon, I guess. He is just chasing a rabbit. (Picks up rusty gun barrel) Why, this is not my gun. Those little mountain scoundrels. They just gave me that wine to get my gun. Well, I'd better hurry home now. (Stops) What excuse shall I make to Dame Van Winkle?

Curtain.

Scenery. — Union hotel in the rear. To right is a flag pole from which stars and stripes wave. As the curtain rises a group of politicians are seen about the door.

A man — (Waving his arms) The rights of citizens must be observed. What did George Washington and the heroes of '76 fight for if not for liberty?

Rip — Oh, that wicked flagon. It has addled my poor head sadly. As I passed through the village I saw no one that I saw last night. I see strange faces at the windows, strange names on the doors, and my own house has gone to decay. The doors are off their hinges and the windows

shattered. A half starved dog, that looked like Wolf, my very own dog, growled at me. Dame Van Winkle was not there. I called for my children but my house was empty, so I came here to find some friends, but they are gone too, and these men are strangers to me. What has become of the old tree? Is that a night cap up there? (Men stroke their chins and so does Rip, and he finds that he has grown a foot beard) And what has happened to my beard? (goes over to look at picture of George Washington) Why, that is not a picture of King George. My, where am I? I thought I knew every one but these men are strangers.

Orator — (Drawing Rip aside) On which side do you vote?

Another — Are you Federalist or Democrat?

Gentleman — What brought you to election with a gun on your shoulder?

Rip — Alas, Gentlemen, I am a poor man, a native of the place, and a loyal subject of the king, God bless him.

The Crowd — A Tory, a Tory, a spy, a refugee, hustle him, away with him.

Orator — He came here to do no harm, but just to look for friends.

Man — Well, who are they? Name them.

Rip — Where's Nicholas Vedder?

Man — Nicholas Vedder? Why he is dead and gone these eighteen years. There was an old wooden marker in the churchyard that used to tell all about him, but it too has rotted and gone.

Rip — Where's Brom Dutcher?

Another — Oh, he went off to the war. Some say he was killed at the storming of Stony Point. Others say he was drowned in a squall at the foot of Anthony's Nose. I don't know. He never came back.

Rip — Where's Van Bummel, the schoolmaster?

Another — He went off to the war too. He was a great militia general and is now in Congress.

Rip. Full of despair — Does nobody know Rip Van Winkle?

A Man — Oh, Rip Van Winkle, there is Rip Van Winkle leaning against a tree.

A Man — Who are you and what is your name?

Rip. God knows, I am not myself. I was myself last night, but I fell asleep on the mountain. They changed my gun and everything is changed, and I am changed, but I cannot tell my name nor who I am.

(Enter Judith)

Judith — Hush Rip, hush you little fool. The old man will not hurt you.

Rip — What is your name my good woman?

Judith — Judith Gardinier.

Rip — And your father's name?

Judith —Ah, poor man, his name was Rip Van Winkle, but it is twenty years since he went away with his dog and gun, and never returned. His dog came home without him, but whether he shot himself or whether the Indians carried him off we do not know. I was but a little girl then.

Rip — Where's your mother?

Judith — Oh, she too has died a short time since. She broke a blood vessel in a fit of passion against a New England peddler.

Rip — I am your father, young Rip Van Winkle once, now old Van Winkle (all stand amazed)

Old Woman — (coming from the crowd) Sure enough it is Rip Van Winkle. Welcome home again old neighbor. Why, where have you been these twenty long years?

Rip — The day I went away on the mountain, I heard a voice calling me. I looked around and suddenly I saw a man carrying a keg. He motioned for me to come and help him. So I did. We carried the keg into the mountains where we saw little men playing ten pins. They motioned for me to pour out some ale, so I obeyed and when they

were not looking, I took some, and liking it very much I took some more until I fell asleep, and when I awoke everything was changed.

Judith — Well, father come home and live with me.

Rip — But Dame Van Winkle. Oh to be sure.
Rip and Judith exit. Curtain. The End.

Dramatizations for Entertainments

The stimulation of appearing before the public and the poise that comes from such work has been long recognized by teachers. The use of the dramatic in the manner that has been indicated will take the place of the "rhetoricals" that have been such a bugbear to many children. Those who are sensitive about performing before the public can gradually work up to it without the dread that comes from the thought of an individual appearance. Then if large sections of the regular school work can be prepared by the pupils and teacher for presentation to parents on special days, the work of the entire school takes on a dignity that it would not possess, had the teacher gone outside to choose selections for exhibitions. Regular work then is something that can be given a special charm for a special time as well as being useful for every day. Parents are likely to take more interest in the regular work as a result. As a usual thing more children take part when some school subject is dramatized, and even those who do not take part in the presentation can feel that it represents their own efforts, for they have helped to create it.

As part of an entertainment given for another grade

and for some of the mothers, an eighth grade with the help of their teacher conceived the idea of presenting in a dramatization some of the work they had been doing in hygiene. Most of the different activities of this subject such as first aid, cleanliness, and correct living habits lend themselves very nicely to dramatization. The teacher formulated the general idea for them and let them work around it.

The ideas of an adult mind, gained by the children in their class work or given directly by the teacher, are evident in the play that follows. Many little features which the teacher might have left out but which appealed to the children are just as evident. One special factor that the teacher must guard against is the desire of the children for too much of the ridiculous. Note, for example, the names of the characters in this play. More or less of this may be allowed, but the children should be led to see that it has its limit, and that the funny section will be more powerful if it follows something that is quite serious and instructive. Quite a study upon this very point was carried on by an eighth-grade class in the construction of one of their plays. One of the boys went so far as to collect examples from master plays. Such wide interests, which are probably the real aim of instruction in classes, are continually developing when we appeal to the child's instincts and individuality.

In this play the children worked with great enthusiasm to learn all the first aid measures so that they might do them very quickly without tiring the audience. They

planned and furnished their own costumes. The boys who were to appear as deacons wore long coats and small mustaches. The girls made an appearance that was quite representative of an old-fashioned ladies' aid society. The making of the entire play together with the practice that was necessary for giving it took up a thirty-minute period daily for two weeks at the end of the term. It made a splendid review of some of the essential features of the work together with a good exposition of the central idea of their course, that they must act, not talk, about cleanliness. Plays like this one can be made and given by children anywhere. They make splendid entertainments.

A HYGIENE PLAY. "Be Clean and Keep Cool."

Act 1, Scene 1.

Characters.

Lizzie B.	Dorothy B. [1]
Hyacinth N.	Alphonse T.
Susan S.	Gaston D.
Maudell C.	Sallie W.
Lena S.	Susan's daughter.

A ladies aid society is meeting at the house of Lizzie B. The ladies are occupied with sewing.

Hyacinth (looking out of the window) — If here don't come Deacon Alphonse and Deacon Gaston.

Sallie — Prepare yourselves, ladies, for an inspection of your teeth.

[1] These names are examples of eighth-grade humor. They do not appeal to the adult mind, and it might have been better for the teacher to require more ordinary names.

Susan — We never have an aid meeting without old Alphonse bothering us about our teeth or Gaston talking about germs and, dear me, this time we have both of them.

Enter Alphonse and Gaston.

Alphonse — As I was saying, Gaston, you can't get the germs until you get them out of the mouth.

Sallie — Well, Alphonse, what is the latest in tooth powder?

Maudell — How many members have you for your Mouth Hygiene Society?

Alphonse — Ninety-five and you five will make it one hundred. But I will not stop until I make it a thousand.

Lizzie — I would like to know who said we were going to join.

Hyacinth — I would like to join, but tell us what this society means, Alphonse, and what good will such a society do?

Alphonse — I will be glad to explain.

(While Alphonse is explaining Gaston examines the place for germs with a large microscope, taking from his pocket a box of disinfectant powder, which he sprinkles in various corners.) The mouth hygiene society was first formed in Cleveland. Its main purpose is to get the public to ward off disease by cleaning and caring for their teeth. Do you know that nine tenths of all the people do not care for their teeth as they should? Also it is true that a room full of people, who have dirty teeth is a fearful source of contamination. There are about thirty-two square inches of surface in every mouth. Think of fifty persons in a room. Thirty-two times fifty makes 1600 square inches or over eleven square feet. Suppose we had a surface of over eleven square feet through which the air we breathe would have to pass every minute, and would you like to have that surface clean or would you want it covered with slime, dirt and germs? But the air we breath in a crowded room is passing in and out of the mouths of everyone there continually. Moreover, if we want a race of strong, healthy people, they must have good teeth from childhood to old age. The first set is just as important as the second.

Susan — Well, well, Alphonse, this seems to be a splendid idea, and I am sure all of us would like to join. Now if we could only get old Mrs. H. to join. She is always too untidy and I don't believe a toothbrush has ever seen the inside of her house.

Alphonse — Mrs. B. will you please pass the water.

(Lizzie brings out a pitcher of water with one glass and when his turn comes Gaston refuses)

Gaston — I refuse to drink from this glass on account of germs.

Lizzie — What? Germs? I see no germs. This is clean water and the glass has been carefully washed since dinner.

(Gaston takes out magnifying glass and holds it over the top of the glass of water shaking his head. He summons Mrs. B. to come and look)

Lizzie — What are those millions of little specks?

Gaston — Just as I have told you, you are looking at germs. Do you know that there is a law against the common drinking cup? Would you drink from a cup that other people and strangers have used? Any amount of the germs on this cup may be disease germs. The germs you saw undoubtedly came from the mouths of the persons who just used this glass.

All — Germs? Do we have germs?

(Maudell has a coughing fit)

Gaston — More germs. Mrs. C. should have put her handkerchief to her mouth to keep us from catching her cold.

Hyacinth — Wet feet, drafts, exposure, and such things cause colds. You don't mean to tell us that there is a cold germ?

Gaston — These things, you mention, never cause colds in themselves. If your system is in good order and you do not get the germs from another's cold you will not take cold. Drafts are good for the healthy outdoor man or woman.

(Gaston and Alphonse start to leave.)

Gaston —Good afternoon, Ladies, I hope you will keep clean and avoid germs.

(Ladies draw chairs up close together and start gossiping)

Sallie — If old Mrs. H. could have only been present: she needs such advice so much.

All — That is just what I think.

Susan — You know, she sweeps with a dry broom and never dusts anything besides the tops of her chairs and table. You could write your name in the dust on her table legs.

Lizzie — And, Law, do think how she sends those kids to school; hair uncombed, faces dirty and clothing never brushed.

Maudell — I wouldn't allow my children to associate with them.

Sallie — And that is not all, the other day her little girl came over to my house and she was a sight to be seen. Her finger nails were long and had never been cared for. They were even green under the ends, and what is more I saw her putting them into her mouth and biting them off.

Hyacinth — That boy's hair looks like a Russian thistle and he pulled out a handkerchief that hadn't been washed since last Winter.

Susan — My children certainly never get into a state like that.

(Enter Lena S., Susan's daughter, with Dorothy H., the daughter of the woman of whom they have been talking. Lena is very dirty and untidy but Dorothy is exceptionally clean in a white dress)

Lena — Say, Ma, Dorothy came over and, Ma, may we make candy, and Ma, we couldn't find a clean dish so may we wash the dinner and breakfast dishes?

Lizzie — Why, Dorothy H., how did you get so clean?

Susan — Why Lena, what made you come over here looking like that?

Lena — That's the way I usually go, Ma. You know it is, Ma, and I just wanted to ask a question.
(Susan puts hands over face)

Dorothy — I've been keeping clean for an entire month. The last teacher in our district taught me how. I went to

school for six years and made the highest grades in my class in hygiene, and you know, I always thought that hygiene was only to study so that we could make grades and pass. The last teacher Miss Useful, taught me that a grade didn't count much, but that I gained knowledge in order to use it. I told Ma, and Ma said that the teacher was crazy, but the more we thought about it, the more we thought she was right, and so we started in to use our knowledge. You should see the difference in our house. And we get books that tell us how to clean up. It is such fun to be really doing things.

Maudell — Well, Dorothy, you certainly show it. What do you do in the house?

Dorothy — Sam and I clean our teeth just before bed time every night. We both help Ma with the house work. Before school in the morning we wash dishes, sweep, and make the beds. It takes such a short time after you get at it. And then, I feel so much better in school after helping Ma at home.

Lizzie — Why didn't your Ma come to aid society Dorothy?

Dorothy — Ma said that she had often spent her time going out and talking when her work at home was not done up, and said she hadn't any time to lose today and didn't feel that she could afford to say anything about other people being dirty when she wasn't clean at home.

Sallie — Well, Dorothy, I am certainly glad your mother has reformed, and Ladies I am going straight home and clean up my house.

All — That's just what I am going to do.
(All go and leave Lizzie at home alone)

Lizzie — Well, dear me, I guess they are right. It is so easy to talk but so hard to do.
(She moves a rug under which a large amount of floor sweepings have been hidden, and begins to clean them up)
Curtain.

Act 2, Scene 1.

Characters.

Doctor Thompson	Lizzie B.
Mrs. C.	Susan S.
Sallie W.	Mrs. Dr. T.
Mrs. A.	Mrs. E.
Mrs. P.	Mrs. H.

Dr. Thompson is giving lessons in first aid to the injured to the members of the Ladies Aid Society. The ladies very rapidly and accurately perform his directions, one standing in front of the other and exchanging places.

Dr. T. — Now the square knot, the head bandage, the sling, the arm bandage, the hand bandage, the eye bandage, the ear bandage.

As the ladies do the work one of them explains each bandage. They have practiced these until they can do them very rapidly and the audience does not get time to become tired.

Dr. T. — Now, Ladies, you have remembered your lessons on bandages very well. Let us see what you remember of your lessons on poisons. If you were to take strychnine by mistake, Mrs. B., what would you do?

Mrs. B. — I would first take warm water and mustard, then strong tea, but I might be so overcome that I could not do anything.

Dr. T. — What would you do to help her, Mrs. Q.?

Mrs. Q. — I would do as she has suggested and then try artificial respiration.

Dr. T. — But first of all, Mrs. Q. you should keep cool. Suppose, for example, that some person, who had been poisoned, would rush in here, and I, a doctor, couldn't keep cool. What would happen to such a person? The first thing to remember is to think carefully before you act. Suppose, Mrs. P. that there was no mustard on hand.

Mrs. P. — I would make her drink all the warm water I could get her to take.

Dr. T. — But above all, Mrs. P., keep cool.
(At this juncture, Dr. Thompson turns to the audience and asks them to name any poison, and he points out a lady to give the antidote. Antidotes are either against acids or alkalis and are thus easily learned. Then as Dr. Thompson is looking into his grip, Mrs. A. rushes in poisoned)

Mrs. A. —Help, help, help. I took a tablespoon of carbolic acid. I thought it was spirits of Nitre.
(Dr. T. jumps, pushes over table full of bottles, and with his hands in his hair shouts.)

Dr. T. — What shall I do? What shall I do?

Mrs. A. — Help, help, I am burning up.

Mrs. H. — Being as Dr. Thompson doesn't "keep cool," I guess I will have to use the knowledge he has taught me. Now, Mrs. E. get me some lime, quick.
(Mrs. E. jumps up and down)

Mrs. E. — Where shall I get it?

Mrs. H. — Knock a piece of plaster off the wall.
(Mrs. E. obeys and dissolves plaster in water)

Mrs. H. — Now, Mrs. A., drink this quickly. (She drinks)

Mrs. A. (After they have watched her breathlessly for a few minutes) My, such a relief. Tell Dr. Thompson that I am ever so much obliged for his timely aid.
(Enter Dr. T. looking somewhat abashed and trying to appear amused)

Dr. T. — I am sorry, ladies, that such an occasion arose, but I thought it best to leave the room and let you ladies show your skill.

Mrs. Ether — Did you hear about the big fire last night?

Mrs. Peroxide — Yes, but how did it start?

Mrs. Ether — Why didn't you know?
(Enter Mrs. Thompson, screaming, and with clothing on fire)

Mrs. T. — Help, help, I am all on fire. (Everybody loses presence of mind)

(Grocery boy enters with a box of groceries. He drops his box, grabs a rug and rolls Mrs. Thompson on the floor in the rug, smothering the imaginary flames.)

Mrs. B. — to Grocery boy — How did you ever think of that?

Grocer Boy — I learned that many years ago at the State Teachers College.

Dr. T. — Very well done, bring on my carron oil and bandages. He dresses wounds on arm.

Dr. T. — Ladies, you have done very well today and so that your children may also profit send them to the State Teachers College.

Summary of Uses and Misuses

Dramatic material may be used in the lower grades without much organization or drill. If the children who read "The Circus Primer," for example, play the different animal parts now and then, interest is bound to be added, and they more than make up the time by the greater zest they put into the regular reading lesson. Indian and Esquimau life, stories they are told, and holiday happenings all furnish splendid dramatic material and are brought down to the level of the children in this way better than by any other method.

In the upper grades longer plays with more careful organization furnish incentive for wide reading in regular subjects, and provide splendid practice in written and oral English.

However, this is only one of the many race and individual interests which every child inherits and may be given too much time and attention. One or two plays like those given for illustration are enough for a term.

There is little danger of doing too much dramatizing in the lower grades. Close attention and careful organization by the teacher are necessary at all times. The actual good that will result from a study of the work to be dramatized and the practice in written and oral English will depend upon the ability of the teacher to direct and inspire the class to do hard work. The result without such direction may be a type of work that it would have been better never to have attempted. The dramatic is to be used as an incentive for, not as a diversion from, school work.

CHAPTER VIII

THE DEVELOPMENT OF A NATURAL INTEREST

Nature's Provisions. The child is naturally provided with many interests. They play a large part in his education. In the measure that the school recognizes and supervises the development of these interests, the more valuable they become. Allowed to grow up in their wild and natural state, interests often deteriorate and are lost, or develop in directions that are not profitable.

Some natural interests are:

1. The love of nature. Such an interest makes an admirable avocation in almost any calling. The man or the woman who has properly developed it will be happier and more efficient. The school should do everything in its power to foster it.

2. Toys. Every child has and is interested in toys. Proper choice of toys by parents and education through toys would easily supply the material for a volume. A child may be helped in his education by the provision of proper toys. The school can often play a large part in stimulating this interest by the recognition of work done with toys, by influencing parents to provide proper toys, etc.

THIS SIXTH GRADE BOY SAYS HE IS GOING TO BE A "BIOLOGIST." HIS COLLECTION REPRESENTS THREE YEARS' WORK. IT IS CLASSIFIED

3. Constructions. To make things is often a delight. Many men receive great enjoyment from the construction interest all through life. I know one man who builds a boat every spring. When the winter gives place to warmer weather, he says that the smell of tar and paint gets into his nostrils. For his exercise during the spring months he builds a boat. He can usually sell it for more than the materials cost him. Thus his interest in constructing furnishes an inexpensive avocation and splendid exercise of the non-violent sort. Manual training should have as one of its chief functions the development and preservation of this interest.

The Collection Interest

Many other interests could be named. The teacher need but study his classes to discover them. To illustrate ways of relating the school to a natural interest the development of the collection habit has been chosen.

The Universality of Collections. The collection interest is such a universal phenomenon of child and adult life that it has been designated by many as an instinct. It is considered here as an illustration of an interest which may be guided and developed by the school. "The treasures of children," says Burk, "are cherished by them with feelings of sacredness, pride, and importance which can hardly be appreciated by the adult unless he be blessed with a bit of foolish sentiment himself or possessed of a vivid memory penetrating back into the recesses of his own childish heart." She records that

one boy had as many as sixty-six collections before he was ten years old, fifty-five of which were still being continued.

Every normal child collects. What he collects would be hard to classify. In the earlier years the instinct is more or less blind. It seems to be the mere desire to hoard different objects that are attractive to the collector. There are close connections with our ancestors in these activities. There was undoubtedly a time in the life of the race when hoarding meant survival. This is true to a certain extent even to-day. But in the past when crops were not so sure, when communication was not so good, and when transportation was not so easily accomplished, the ability to hoard, especially such things as food supplies, must have been a valuable asset to individuals and races. In the animal world it is seen in bees, ants, squirrels, and many other creatures, and undoubtedly it is necessary to survival there.

In more civilized times this interest has changed and does not have such close relation to the rest of the life of the collector. Yet it is an instinct just as clearly as it ever was. The housewife who puts up fruit in the fall usually gets more pleasure from the mere realization of an instinctive desire to collect than from the thought that she is putting away something for future use, although the motive of future use may be a part of the collecting interest. But the woman who is putting away her fruit for the winter gets great pleasure from the mere joy of putting it away.

This is the test of the instinct. It is pleasant in the immediate sense, and it is useful in a more remote sense if rightly used. The financier wants more money, not especially that he may have more of the desires of life for himself or others that money can buy, but for money itself, as much as he can get of it. Land, houses, ships are all a part of his desire to achieve, and achievement in such cases is little more than a perversion of the hoarding and collecting interest. It is one of the deepest and biggest interests in life, and it has not been given its proper place in the schools. One might say of collections what has been said of many other things, " Let me see the collections of a boy or man, and I will tell you what sort of person he is."

The Significance of Spontaneous Collections

Most great men have been great collectors. In visiting recently a university president it was noted that one of the chief interests in the life of this man seemed to be his collections. He had begun collecting as a boy, and his home, his rooms at the university, in fact every corner of any of the places he frequented was occupied by some sort of collection. He had hundreds of them, from reference catalogues to collections of butcher knives. Another man, the president of a normal school, says that his entire life has been devoted to collecting. The chief thing in his school is the large space given to museums.

But one need only turn to the biographies of great naturalists to see what an important part this interest played

in their lives; and for another side of it one need only look into the lives of the great financiers to find that they began to save very early in life. In the one case the collecting interest took a scientific turn; in the other a turn toward more worldly possessions. It has been said of one of the great American naturalists that he had such a passion for collecting that he could not be trusted in a museum; for he would be sure to steal any strange specimen which he might need to further his own collections. Naturalists who had especially wonderful collections were Agassiz, Baird, Burroughs, Wilson, and Thoreau.

The hoarding of the miser seems to be a perversion of the collecting interest. There is usually something lacking in the life of the miser. One who has friends and family and a healthy supply of other interests is not likely to develop such a trait. George Eliot in "Silas Marner" gives us a good picture of a case of this kind; she also shows how a little girl came in and supplied the necessary stimulation for better traits in the same nature.

Some Educational Values of Collections

Persistence in Orderliness. One of the hardest habits to form in children is order. Continued watchfulness on the part of parents or teachers is almost impossible. Another and better method of bringing about orderliness is to allow the child to have possessions of his own and encourage him to keep them in order and to classify and

arrange them. Collections serve this purpose admirably. The boy or the girl who keeps a collection through a number of years and keeps it in order will have gained something from it in the way of orderliness that will never be entirely lost. The collecting interest is valuable for this reason if for no other. Anyone who has tried to keep collections for a considerable time will readily appreciate this. Such a person knows how difficult the task is and the value to the child of a collection kept throughout a number of years.

The average college student is unable to keep a card catalogue of the references which he wishes to preserve. It is so hard to keep and care for, and interest is so transitory, that such a catalogue is usually allowed to scatter or is soon entirely forgotten. Those who have been collectors in childhood have little trouble in keeping these catalogues. The increase in a student's efficiency from such practice could not be measured, but it is undoubtedly true that if a graduate of a normal school or college had conscientiously carded and filed away all the valuable suggestions and references he might have recorded during a college course, his efficiency as a teacher would be multiplied indefinitely. Librarians continually complain that their greatest bother comes from letters from students who have gone out to work, but who have forgotten even the names of the textbooks they used while in school. The point of interest here is that the practice and ability gained from keeping collections in childhood increases the ability of the adult.

Moral Value. Another advantage of having and keeping a good collection is the self-respect that comes to a child from doing anything well. The collection is also a measurable thing in Boyville. The respect that accrues to a boy who has a fine collection of stamps, tags, birds' eggs, bird nests, butterflies, etc., is a very good reward for his work. Such a reward is the real life prize for which all of us work: the acknowledgment of good work by those who understand us and the tasks we are trying to do. The moral value alone of keeping a collection is enough to make it worth fostering.

A Center for Life Interests. Even more important than the two values just mentioned are the life interests resulting from collecting. Most collections are those connected with nature study. Thus the child who keeps a collection of bugs, bird nests, or stones, things which arouse interest in the great world outside, usually keeps his interest in nature all the rest of his life. An investigation of adults who have kept collections reveals that a collection of some sort once having been made, the interest goes far into life. A man who collected stones when he was a child says that stones have been interesting to him ever since. When he goes walking, and often he would not go if it were not for this interest, he likes to pick up peculiar stones, and he thinks of his old collection although he has long since ceased to keep it up. Another says the same of birds and bird nests. And so it continues. This survival of the collecting interest is illustrated in the autobiography of Herbert Spencer.

If collections touch life in such a manner, it will be well to cultivate them and direct this energy into fields that are likely to be especially valuable.

Special Collections

Scientific Collections. From making scientific collections of stones, bugs, butterflies, or flowers, a boy may develop a scientific turn of mind which will be very valuable to his life career. His desire to investigate the true nature of his treasures may lead him to study topics that are quite technical. His reading may take this direction and may mean the turning point in his life. When reading becomes valuable to the boy for getting information along the line of his activities, it has become something more and better than an interest in wild tales from fiction. A boy who had a collection of butterflies had read at the age of eleven more books in this field of science than the ordinary college graduate who may have taken half a dozen required courses in biology in his work for a degree. He says of his reading:

"Most books don't give you what you really want, but I have read a few, maybe a couple of dozen in the last three years, since I began my collection. Among them are 'Ways of the Six-Footed,' 'Insect Life,' and 'Butterflies West of the Rockies.' Comstock also has a fair book, and I read an interesting book on 'English Butterflies' not long ago. I have studied Holland's big books continually, that is, Holland's 'Moths' and Holland's 'Butterflies.'"

One need have no fear about the reading interest of this boy.

The collection may serve as a motive for much of the boy's school work. His story telling may be based upon rambles and experiences with his collections, and this may give occasion for an endless amount of constructive criticism of his English. He may acquire the ability to speak correctly and to describe accurately from telling of such experiences. He may write compositions about his collections. Often he brings more valuable information to the class in these compositions than the teacher is able to give. For example, when a class wanted some real information about how to make a collection of moths and butterflies, the composition below was written by a boy in the seventh grade and read to the classes. The result was a great burst of interest by a large number of children, and a knowledge of moths and butterflies soon became common property of these grade children. The values of moths and butterflies, which ones were destructive, with actual examples of each one, their methods of propagation, and their life habits made a foundation for home and school work for some time.

A Boy's Description of His Collection

BUTTERFLIES [1]

The first thing to get to start an insect collection is a cyanide of potassium bottle, a net, one or more cases. I recommend

[1] The punctuation and spelling, as well as the entire composition, are duplicated from the work of a seventh-grade boy.

Riker mounts 8 by 12 inches. Moth balls should be put inside the cases to keep the moths out. Pins and mounting blocks (all sizes) are necessary. Mounting blocks are just blocks with grooves through the middle for the body of the moth or butterfly. All these things can be obtained from the Kny Scheer Co. N. Y.

When you see the moth or butterfly you want, you must get your net and try to get him in it. After this is done squeeze the thorax so as to stun the insect, then put it in the cyanide bottle where it soon dies. This jar or bottle is made by putting ten cents worth of cyanide in the bottom of the jar, then put some plaster paris over it and punch holes in the plaster paris so that the fumes may come through. After the insect is dead take him out and put him on the mounting block. Stretch him out so as to make him appear as lifelike as possible. Wrap thin thread around the block and over the wings lengthwise of the body. Wrap until close to the body and then tie the string. Leave for three or more days. Then put in the case by removing the glass lid and inserting the insect on the cotton just as you want him to appear. Put moth balls just under the corners. Three of a kind make a good case, male and female, and underside.

The Eastern insects are generally more attractive than those of Colorado. The moths are usually prettier than the butterflies. They come in families as you will see from the names. There is the Papilo family, the Agrynnis family, and many others. The names of the ones I have are as follows:

Butterflies:

1. Vanessa Antiopa.
2. Limochores taumas.
3. Hesperia Xnthus.
4. Hesperia Montivaga.
5. Satysies alope (leaf wood nymph)

6. Pholosora cattillus (west common black)
7. Chrysophanus helloides (America copper)
8. Bassilarchia Astynax.
9. Chrysophanus — (America copper)
10. Pholisora libya (east common black)
11. Hyapshila phylalus.
12. Erynis metea.
13. Arosia plerippus (milk weed)
14. Basilarchia disippus.
15. Colias somelas (Sulphur)
16. Colias interior.
17. Tertas Mexicana.
18. Nathatis iola.
19. Colias Eurytheme (giant sulphur)
20. Omega Noston Euryetice (brimstone)

. . . . etc., etc., continuing to forty different kinds of butterflies and twenty-one different kinds of moths, with the statement at the end that he had several kinds that he could not name.

Stamp Collections. A stamp collection formed the basis for almost expert knowledge of geography by an eighth-grade boy. Without a doubt he knew more about countries in many remote parts of the world than did any of his teachers. It is admitted that he had stamps from colonies of which the writer had never heard. A great deal of interest and value was added by a few suggestions from the teacher. He classified his stamps under the headings of mother country and colonies. He soon came to know all the colonies and islands with independent local governments of all the great nations. He would constantly look these up on maps, and when-

ever he found a stamp from a country or colony that he did not know of, he would immediately find it on the map, noting whether it was a dependency, and, if so, to what country it belonged. He made special studies of the countries from which his stamps came.

The knowledge of geography in such a case is not the main good result of the collection. The ability to do research work at an early age and the habit of independent investigation when the teacher or taskmaster is not over him emancipates such a boy. If no accident occurs, his future is assured. The boy who had this stamp collection had been quite a cigarette smoker before his interest developed in his project. He quite forgot his smoking in his eagerness for all kinds of work after this, and he was advanced a grade in school because he had clearly demonstrated his ability to do high school work. In high school his work was of the highest grade. This boy's work was the result of contact with a teacher who fostered his life interests and took interest in him as a boy.

Collections to Be Made by Teacher and Children for the School. Children who become interested in such collections as private enterprises should be encouraged.

Geography

Post cards.
Pictures.
Museums of products.
Railroad folders containing maps and descriptions.

Steamship folders.
Special literature advertising farm crops, business opportunities, and resorts.
Coins.

The school which has a few of these collections will not only have a large and growing body of material that will furnish a center for its geography work, but an interest in objects of the nature collected will go with the children into life. They are likely to bring rare gifts to the school. These collections and museums should be made a regular source of information concerning every new country or industry studied, and the more that is made of individual interest and donations the larger the results will be. It is often surprising how large and valuable a collection may become in one year.

History Collections

Old histories and source books.
Historical documents.
Flags.
Historical pictures.
Buttons on which are pictures of presidents or other historical characters.
Coins.

Nature Study

Butterflies and moths.
Birds' nests.

The collecting of birds' eggs should be discouraged. The boy is not hard to control in this matter. The sub-

stitution of the nest, which may be taken after the birds have reared their young and left, works quite well. Other collections from nature are:

Stones.
Seeds.
Pressed Flowers.
Shells.

Both historical and nature collections are valuable to the school and furnish a decided help in the study of these subjects. The description of the values to the individual that may come from any one of the above collections might take up an entire chapter.

Collections to be Discouraged

The collecting interest is general in the sense that it does not attach itself to any one type of article. Objects in nature come nearest to holding first place. But the field of endeavor is likely to depend upon environment and upon suggestions from other persons. Energy that may have been applied in wholesome and valuable fields is often dissipated in the collection of objects that are degrading.

A collection of this type is tobacco tags. Almost every man has collected them sometime in his boyhood. They lead boys to gutters, to trash piles and sweepings from hotels and pool halls, and into the alleys behind grocery stores. No one can question the delight of a boy, who, after going to the bottom of a trash heap, finds a strange new tag. But a study of his in-

terest will convince one that it is easy to turn him toward nature or geology or something where the energy which is being wasted on tags can be used to advantage. Common as it may be there is no need of the tobacco tag, cigar band, or cigarette picture collection. It results from chance association, nothing more.

It is foolish to rail against such collections or attempt to forbid them. The only sure method of getting rid of them is to substitute something more valuable. A keen insight into boy nature is necessary in order to do this; children turn their energies into many strange channels. A number of useless collections that are quite common are:

Horses counted, white or black.
Bald-headed men counted.
Trade marks.
Envelopes.
Knots in ropes.
Labels.

It is not a sin to indulge in such activities and often they furnish a channel for surplus energy which it might be hard otherwise to control. But the same energy should be used to positive advantage. It is often surprising how quickly a child will turn to more worth-while endeavor at the slightest suggestion.

Finally, we have an interest which will function more or less, whether or not we recognize or use it. If the school ignores it, the result is likely to be the same as with anything else that grows wild and uncultivated.

DIRT IS CLEANER THAN BAD AIR. IT IS OFTEN MORE INSTRUCTIVE THAN AN INDOOR RECITATION

CHAPTER IX

THE SELECTION AND EMPHASIS OF SUBJECT MATTER

One of the most important functions of the teacher is the selection of subjects and parts of subjects for special emphasis. Some subjects must be given more time in the day's program and more space in the curriculum than others. Also parts of any given subject should be taught with greater emphasis than other parts. There are facts in every branch of learning which need not be brought into the school at all, and every teacher, as he plans his work, should conscientiously ask himself whether the material he is requiring the children to spend their time and energy in learning is worth while.

But even when it is evident that the subject matter being taught is valuable, there is always room for much thought on the question whether the children might not be engaged in something far more profitable to them. "For everything we gain we lose something else"; while we were refining the ability to write by practicing long after the necessary speed and legibility for complete living has been reached, we might have taught the children how to keep books. In this case it is worth while to be able to write better than "very well," but

not as essential to most of us as a hundred other abilities which might have been improved during this time.

To some material the child need have little more than a good exposure; while some should be mastered as an integral part of his life. The school of the past did not properly differentiate between these classes of subject matter. It followed the slogan which we hear now and then given in criticism of the schools to-day, "It makes little difference what you do just so you do it thoroughly." "Thoroughness" when blind is just as bad as its opposite. One may be a thorough villain. In school a child may be forced to waste most of his growing years in "thoroughly" covering a curriculum which unfits him for success in life.

In geography and history, for example, "local color" may be brought into any lesson in order to stimulate interest. How the Hindu boy goes fishing and the kind of fish he catches, and John Smith explaining the compass to the Indians are bits of local color well worth considering; but they serve as mere incidents. A study of the life of Longfellow may serve as a setting for the literary appreciation of his works if it is made with this specific aim. There is no value in requiring the class to memorize and be able to give in a test the dates of his birth and death, or the times and places of the chief incidents in his life. In hygiene the child may be shown a model of the human spine, but we no longer require him to know the number of bones therein. Undoubtedly such a model should have the correct number, but this is

an incident. Concrete illustrations might be given of a large number of materials ranging in value from those given as incidents to such important knowledge as the necessity for, and the proper methods of, caring for the teeth, the acquisition of the habit of reading good books, and accuracy in the fundamentals of arithmetic. When we have covered any subject, certain definite valuable parts of it should be retained, and these should be the parts upon which children are examined. The remainder of the subject need not be considered further. The ability to select that which is vital must be developed by both teachers and children. Too much time has been wasted on the unessential. Anyone who will visit schools may see whole recitations and even months of them devoted to unimportant features of a subject while the vital elements are being entirely neglected.

Illustrations from Geography

From studying the work in geography as it is offered in ten of our leading cities and in several well-known private schools, it appears that the attitude towards this subject and the selection for emphasis of its various elements may be summed up as follows:

Below the fourth grade geography, history, reading, story-telling, and handwork are so combined and correlated that geography is not a separate subject. Thus the geography which furnishes an interesting story, that which is connected with a historical event, and the portions which may lend themselves to illustration in handwork or furnish good reading selections are chosen as being especially valuable at this time

The three grades, fourth, fifth, and sixth, are rapidly being fixed as the period in which geography is taught as a separate study. This, of course, does not include commercial geography.

The elements which are being emphasized are:

1. Thorough understanding of the locational, business, and commercial geography of the home city, county, state, and nation.

2. Constant comparison with home conditions in the study of other places.

3. A thorough understanding of the world in the aspect of its larger elements; that is, continents, oceans, large rivers, mountain ranges, leading countries, and important cities.

4. As much specific study as time will allow of the various world elements, *i.e.*, peoples, industries, places of interest, and products which can be related to the lives of the children and be given meaning and significance to them.

Considering the above principles representative of the ideals of our most successful schools, any teacher may evaluate lessons and courses of study in geography so as to teach in such manner that the class will acquire a good body of essential and valuable knowledge, which will form the core of the work. Wide contact and reading should form the background. Too often children are required to memorize facts which are not important, contacts are not wide, and nothing definite is retained. Some illustrations of facts of comparative value are:

Valuable information:

1. Important facts about the home city are the locations of the chief buildings, as post office, library, parks, places of business, etc., the names of the streets and a knowledge of numbering so as to be able to locate any address with ease, an understanding of the city's growth and size, imports and exports, manufacturing and other industries, railroads, telephones, and the like. One may proceed to the county by study-

ing in a comparative way other cities in the same county, the value of the surrounding country to the home city and the value of the city to the rest of the county. The state and nation may be studied in the same way, by making constant comparisons with local conditions and by revealing the influences of each upon the other.

2. In studying foreign countries their connections with the home country must be a constant part of the work. London is a great commercial center, for example. How does it compare with New York? Why are New York and London such large cities? What are ten other large cities of the world? Why have all of them become large cities? What does America export to and import from England? Are the industries of the home community represented in this commerce? Are we, therefore, dependent upon business success in London? etc., etc.

Worthless information sometimes required:

1. Memorizing long lists of cities with the location of each.

2. The "bounding" of various states or counties, especially distant ones.

3. Studies of coast lines requiring the ability to outline and name bays, capes, peninsulas.

4. Memorizing specific lengths of rivers.

5. Memorizing the names of state capitals. Often the capital of a state is a very unimportant place.

6. Memorizing the names of the capitals of all the countries of a continent, as South America. Only the capitals of the leading world powers need be learned, and these usually for some other reason than the fact that they are capitals.

In fact, it may be said that a wrong emphasis has been made in geography because of too much pure memory work not connected with any definite purpose. Once let the teacher begin

to teach of places and industries for their specific values to the children, and mistakes are not likely to be made.

A noted American educator expressed his opinion of the old-style memory work he had gone through in geography by the statement, "I regard my knowledge of these facts as very important. I may be called upon to use it at any time. If, for instance, a burglar should come into my house to-night, place a pistol at my temple, and tell me to name all the bays and capes of Massachusetts or forfeit my life, I could name them for him and thus save myself."

The Development of the Present Attitude towards Subject Matter. Three definite periods have marked the growth of the subject matter which now makes up the American elementary school curriculum. They may be described as the traditional, the hypercritical, and the evaluating periods; the last is the product of the struggle between the first and second. Since there are still many representatives of the traditional as well as of the hypercritical, it is well that we consider the essential elements and basic principles of these periods to secure a better understanding of evaluation and selection.

The Reactionary or Traditional View

During the latter half of the nineteenth century school authorities held sway in a manner that almost approached divine right. Anything that pertained to the school was to be taken as a matter of course. Those who did question were looked upon as having aligned themselves against the forces which were working for the betterment of mankind. It was during this period that a Boston

superintendent said he would like to see the person who could find anything the matter with any school in that city. This is an instance of the typical attitude of satisfaction among schoolmen everywhere.

During this time most of the curriculum which we have inherited was becoming established. Due to lack of criticism little care was used in its selection. Much was incorporated as the result of accident. A teacher, after an extended period of trial and error practice, might suddenly come into control of a school system. Never having been schooled in educational values, he naturally selected the high points in his own experience as the standard for his schools. Change came slowly or not at all. Knowledge was looked upon as an end in itself. The highest aim was as broad an acquaintance with the subject matter of the school as it was possible to attain. No discrimination was made between facts of different value, and the application of the knowledge gained at school was not to be doubted or specifically questioned. Of course, it did not function. Its value was merely assumed.

The subjects taught were those whose materials were easiest to obtain. Those which demanded the least equipment on the part of the school and of the teacher naturally came to the front. This was true, not because anyone maliciously planned such a program, but on account of the general lack of inquiry into school practice everywhere. Parents paid their taxes and were as interested in the advancement of their children as they are

to-day, but everyone seemed to assume that sending them to school was the final parental sacrifice. Once he was successfully through school, the future of the child was considered assured. Spelling, reading, arithmetic, writing, American history, and geography were stressed as the "essentials," and now and then a few other subjects such as music, drawing, and manual work were allowed to come in as "side lines."

This view, to be sure, has not entirely passed. There is always a minority who like to find themselves in harmony with tradition. This group also finds ready recruits from the great mass of incapables who cannot attain the modern standard. Apparently the large body of traditional supporters is a product of the traditional school; they are specialists in its subject matter; they earn their living by teaching it. It is too late for them to change, so they band themselves into societies and use every means they can to uphold what they do. Eliminate those who have financial reasons for upholding the unselected subject matter of the old curriculum, and few would be left to defend it. It is readily understood, for example, why a teacher who cannot speak or write correct English will advocate diagraming and parsing in the place of teaching effective speaking and writing.

The Hypercritical View

The period of establishment having passed, the work of the more active schoolmen was no longer necessary in arousing intellectual sluggishness to a proper support of

education. Their energies were now turned towards the reform and improvement of the schools. This gradually led to an attempt to establish education as a science and teaching as a profession. The great leaders of the new movement were sane in their criticisms and sure in their recommendations. They set up the needs of the child as paramount to the demands of the curriculum. They studied childhood and established a concrete foundation for the discovery of what these needs were and how the old curriculum violated them. They gave us a general philosophy of education which it will take the world centuries to live up to.

Following their lead, however, there has sprung up a body of critics who are more destructive than constructive. They seem to think it the duty of an educator to criticize that which is. These persons may be said to hold the hypercritical view.

The hypercritic is in the same class with the political agitator. His development has been brought about by a series of circumstances. First of all, those who are temperamentally unstable and pessimistic will always be overcritical of any line of work they enter. We find them in all the professions and trades. Second, there will always be a group who have ideal theories which they have not had opportunity to practice; they cannot realize that giving advice is not difficult, but that carrying it out is another matter. Third, there is much theory which would be found wanting if applied in actual school work.

The difficulty of distinguishing between the hypercritic, who has no basis for his statements nor anything to take the place of what he would destroy and the constructive educational student is one of the factors in the lack of progress in practice. The public knows that if it follows the traditional view it is not likely to create new difficulties for itself, and that in taking the advice of its critics and trying to live up to their prescriptions, unknown difficulties worse than those at hand may be encountered. As a hindrance to advancement the hypercritic is the hardest problem the true reformer has to deal with.

The Modern Study of Values

During the last decade we have seen leaders in educational thought joining hands with the administrator in solving the tremendous problems which the latter has to face. Instead of condemning from the outside, educators have gone inside and have sympathetically considered the values of what they find. The many careful surveys containing constructive recommendations are examples of this new union between theory and practice. To be sure, the educational " expert " often finds that many of his basic principles and theories will not work when he comes to apply them to an actual school. He also finds that the ability to wield school machinery is a science in itself; for in helping the public in one way, it is very possible to injure it in several others.

Principles Underlying Evaluation

The first question which faced those who were striving properly to evaluate the work of the school was: "On what basis shall we judge this work?" The old attitude, as explained above, was almost a worship of the mastery of subject matter regardless of its application. A new spirit of criticism was beginning to condemn the course of study as being without any value.

Function in Life the First Principle. There is no disagreement among educational leaders to-day concerning the basic principle in the evaluation of school subjects. Their use in life or functional value is the first measure that should be applied. The school is fast eliminating subjects and parts of subjects which have no life values.

The idea of function must not be limited to purely vocational values. To be able to earn it is no doubt a basic element of complete living but not necessarily all of it. Subjects of social value and those which teach one to appreciate the world in which he lives must also be included. The ability to spend spare time in wise and profitable recreation must be developed, and training which will insure physical and mental stability is just as necessary. The principle of function is not narrow but it is definite. There are four specific ways in which subject matter may function in the lives of those who take it. These are:

1. *The development of physical and mental health.* Play, physical training, hygiene, and physiology come directly under this function, and are the most important subjects

in the curriculum because physical and mental health are essential to the full realization of any of the other aims of life. The school has not appreciated until recently how large a part it plays in developing or injuring the health of children. It is hard to convince some teachers that it is more essential to the child's development that he play well, than that he study arithmetic or grammar, but we are progressing, and the time will come when at least one fourth of our regular school session will be spent in some form of play.

2. *Training which will develop the ability to earn a living*, or to produce something of economic value. Woodwork, mechanics, printing, commercial branches, home economics courses, and agriculture have been included in the elementary school curricula of many of our leading schools as pre-vocational subjects. These are gradually finding a larger place and are being given more time. From the fifth grade up, an hour a day should be devoted to some type of definite pre-vocational training.

3. *Social development.* A third factor is the development of the child's social nature. He must be trained to live at peace with his neighbors and willingly to shoulder social responsibilities in living up to his duties as a citizen of his community, his country, and the world. Discipline, civics, history, some parts of literature, and free social relationships between the children contribute directly to this function.

4. *Culture and recreation.* Education must place man upon a higher plane by giving him the power to enjoy

the world about him in a better way than he could if he merely indulged his instincts. Any subject which contributes to the development of the ability to appreciate better things is quite worth while. Culture, however, has been a very ambiguous term in the past. It is gradually being coupled with recreation by modern educators. This both elevates recreation and makes culture practical. Music, art, literature, history, nature study, and the modern languages are in this class. Any subject, however, may be cultural and recreational if it is taught in the right way.

The fundamentals of the common branches are essential to the development of any of these functions, and are regarded everywhere as the common basis.

The Objective in Teaching Every Subject. Every subject in our present elementary school curriculum can be made to function in all of the four ways described above. The chief duty of the teacher is to select the useful and discard the useless parts, and to use methods which will relate the materials selected to the lives of the children as embracing these four functions of subject matter.

Illustrations of the application of these principles to various subjects:

Geography.

The illustrations of the selection of vital facts in this subject, as given earlier in this chapter, bring out all the four elements of the usefulness of subject matter.

In studying, the home city health conditions should be one of the chief features considered. The child should study the water system, considering at all times the possibilities of con-

tamination. He should know how his city ranks with others from the health standpoint. In fact, in studying the activities of man anywhere upon the face of the globe, the teacher should constantly impress upon the children the necessity of vitality and health in the pursuit of any occupation. When the child has finished his course in geography, he should have a better understanding of the necessity for him to keep up and further his own vitality.

Geography, of course, in its studies of industries, occupations, manufacturing, etc., should have a direct vocational bearing. From it the child should learn ways and means of travel, the values of different industries, and possibilities of vocations. This knowledge will form a general background for any vocation.

Geography can be taught so as to have large social influence upon those who study it. In learning of the various elements of the home community, state, and nation, the child should come in contact with facts which will make him a better and more efficient citizen. In learning of the relation of his own nation and community to foreign countries, his social consciousness is enlarged. The City of Indianapolis has recently taken a great educational stride by combining its history, civics, and geography courses.

The study of geography may be made to function in the culture-recreational direction by developing the child's interest in the rest of the world. This knowledge should be valuable to him in ordinary conversations, reading, and travel.

Thus, if properly selected, the subject matter of geography may be made to fit into every phase of the function of educational subject matter. That it has not done this in the past is due entirely to the facts that were selected for teaching and the methods of presenting them. There is plenty of valuable material in the subject.

History.

History, when properly selected, also furnishes good material in all four fields.

Health and vitality can readily be shown to be a basic feature in the exploits of great men and in the destiny of peoples. Washington succeeded, first of all, because he was a vital man. Every boy or girl who studies the exploits of great men should be impressed by this fact. The Roman empire declined because the vitality of the people was sapped by easy living and by over-indulgence. History abounds with instances which may be used to impress upon children the necessity of vitality.

Vocationally, history is being vitalized by substituting for the study of wars and of battles the history of the growth of industries. A study of the heroes of peace, and the large part that is always played by labor and the industries in the advancement of any nation either in war or in peace is bound to help the vocational viewpoint.

History, like geography, has large social values. It is readily evident to anyone who will study the teaching of history in the German schools that this has had a direct influence in bringing about the world war. A knowledge of history should enlarge the vision and sympathies of the student as well as make him better informed. The subject is invaluable from this angle.

History should be so taught that the child will want more of it. He will thus read and discuss it for his recreation. Such recreation is highly cultural.

Methods of teaching for both health and social values are considered in later chapters. They are neglected more often than the other two.

A Second Vital Principle Is to Make Subject Matter and Methods Conform to Physical and Mental Growth of Children. Much waste is incurred and immeasurable injury is inflicted upon those whom we teach when we force them too early into tasks which they would master later on as a matter of growth and when we defer instruction in subjects which can never be mastered unless their elementary phases are studied early. To adjust rightly the subject matter and methods of the school to the growth of children is not fully possible with our present knowledge. Meumann has collected the experimental data up to 1910. It has taken two large volumes, and with all the problem of adjusting school practice to child growth is not yet solved. There is a consensus of opinion, however, among practical leaders regarding a few basic features of the application of this principle. These will be considered in a general way since space does not permit the bringing in of experimental evidence at this time. They are:

1. The mechanics of the common branches should be learned as early in the school course as is compatible with physical and mental health. They form the basis for all other school work and are mastered with less difficulty early in life than at a later period. This statement may seem to run counter to the proposition which has been so well demonstrated in experiment that up to the age of twenty or thereabouts the ability to memorize increases. But there are two factors in mechanical learning: the first is the act of learning or memorizing; the

second is the retention and application of that which is learned. All the experimental evidence collected by Meumann points to the fact that those subjects which must be retained throughout life and which form the constant basis of all mental activities should be learned early, for retention is best at this time. The experiments of Penschew, Radossaljewitch, the Paris Commission, and Meumann, all coincide upon this point.[1] Children retain better than adults. This idea is also in conformity with the law of Jost, which is, that of two associations equal in all other respects the older is remembered best. In accordance with this law, then, one who has learned the multiplication tables at the age of seven will retain them better, all other factors being equal, than one who learned them at the age of ten or twelve. Likewise a foreign language, although learned more quickly by the adult, is mastered better and may be applied to a greater extent by one who learns it as a child. The multiplication tables, addition, division, and subtraction, correct usage, pronunciation, and punctuation in English, one foreign language if any is to be learned, spelling, and the bodily habits connected with writing should be stressed in the lower grades.

The question of health and spontaneity has been raised in this connection. A number of our leading educators have, with good grounds, urged that little children should not be subjected to the strenuous methods which were so commonly used in learning mechanical facts a decade ago.

[1] Meumann's Vorlesungen. Englemann (publisher), Leipzig.

Long periods of drill during which undivided attention was demanded, the old disciplinary methods which required children to sit still and in specifically designated positions, and lack of reaction by teachers to the spontaneous manifestations of the children, all resulting in injury to bodily health, overstrain of the sense organs, and the stagnation of the imagination and emotions, are common features of the school which teaches mechanical facts regardless of everything else. It would be better for the children and for the state to close our schools than to teach in such a fashion; and when we emphasize the necessity of acquiring the useful mechanics of the common branches early in life, we must not in any way allow the teaching of these mechanics to run counter to any of the other vital principles of selection and emphasis. By making the principle of function come first, and by including as the most vital element of this principle the fostering of mental and physical health, the danger of physical injury is eliminated before the question of teaching the mechanics arises. If learning them is a physical detriment to the children, mechanics should be discarded.

However, all the objectionable factors respecting the learning of mechanical facts in the first two grades or in any of the grades, for that matter, can be reduced to two: (1) overstrain due to periods of work which are too long or too strenuous requirements, and (2) bad methods which tend to make too much of the mechanical, and do not allow freedom for the unfolding of the child's nature in its rational development. An illustration of reading,

writing, spelling, and arithmetic being taught in the first grade with large results and without any of these objectionable features is found in the Francis W. Parker School. Here the work is related to the interests of the children and is not allowed to interfere in any way with their spontaneity or health. In the Horace Mann School, reading, spelling, and writing (or printing) were for several years made a part of the work of the kindergarten.[1] Good results were obtained without any objectionable methods being used.

2. Abstract association must not be expected in the lower grades; it is only beginning to develop when the child leaves the elementary school. Following this principle we must strive to make our methods and materials as concrete as possible. The child in the elementary school is a realist. He must see, touch, and hear the real materials concerning which he is taught. He must do more as well as talk more.

In accordance with this idea the school is turning more to life illustrations, museums, and laboratory methods in its instruction. Books are not being discarded, and probably more is gained from their use than ever before, because of a better understanding of their real values; however, they are not allowed to take up as much time as they once did, and memorizing their contents in the old mechanical way is not considered worth while any more. To-day the child is taught to read a book in order to find information about something which he is studying in a

[1] Teachers College Record, Sept. 1916, pp. 330–343.

concrete way, and what he finds there is not to be considered the end of his lesson. The great out-of-doors, manufacturing establishments, social life and institutions, concrete objects, specimens, and books make up the modern text.

3. The child must be regarded as a growing organism. Therefore, the results of his work must be judged from the standpoint of his development and not in a commercial or business sense. If a growing child makes a mistake, we must regard his mistake as an indication of his immaturity or of unsatisfactory methods which were employed in his teaching. In no case is he to be personally judged upon the basis of his instability. It was once the custom to place the burden of responsibility upon the child. Now, although children are not condoned for making mistakes or for wrong actions, the burden of responsibility is placed where it rightfully belongs, upon the shoulders of parents and teachers.

For example, it was once the custom to assign hard tasks and fail all those who could not accomplish them, schools being judged as efficient if they were able to make the requirements so difficult that a large number of children failed. To-day we are standardizing our requirements and are measuring results by judging the teacher's efficiency in bringing a class up to the best modern standards. It is usually an indication of poor teaching or impossible requirements (which are as injurious to children as are tasks that are too easy for them), if a large number in a class is failed. "Mortality like gout," said McAn-

drew, "is a fashionable disease." But the school world is making progress in dealing with this, its ancient ailment, and in some places we are already seeing an average acceleration rather than the old fifty per cent retardation. In large cities where educational machinery has been a difficult problem, and in places where educational progress has been slow, retardation is still large; but in the next few years this problem is going to be attacked and solved.

The fluctuation found in a child's learning any new skill is an important factor here. In general it may be said that the younger the child the greater will be the fluctuations in his advancement. Teachers have not understood the significance of this fact. They have expected constant progress. Those who have been measuring education have failed to consider unexplainable fluctuations as much as they should. The child learns by spurts. His ability advances and recedes. To-day he may do well and to-morrow, without any apparent reason, he may fall far below this attainment. When we know more about these fluctuations, we will be able to deal in a better way with them, but at present we can at least recognize their existence and not expect continuous advancement. The failure of pupils to live up to expectations at critical moments has been a source of great discouragement to teachers. In the light of the facts both teachers and supervisors must learn not to judge recitations or the development of children by single observations.

It is impossible in this volume to consider in detail all the many phases of selection and methods of teaching school subjects in accordance with child development; the three elements of this principle which have been considered here have been preferred on account of the larger attention they are receiving in leading schools.

The Selection and Emphasis of Subject Matter in Accordance with the Difficulties Which Are Encountered in Learning It. A great deal of time has been wasted by teaching subjects and parts of subjects that are difficult at the same level with material which is easily learned. The critical features of a subject must be discovered and stressed. The parts that are easily learned, or that may be mastered through association without being brought into the classroom, should be known by the teacher and taught accordingly. Thus, there are two elements to this principle of selection.

1. The selection of facts and processes which the children need to know and which are especially difficult to master. These must be placed before the child at the moment his mental growth has reached the place where he can study them to advantage. They should be stressed and associated with his life activities in every possible manner, and they should be reviewed and selected for special emphasis as often as it is profitable to do this.

When the most difficult of the useful subject matter is not stressed in this way, we leave the education of the child who is finishing elementary school in a very chaotic state. When he should have been overcoming the

critical difficulties of the common branches, we have allowed him to drift over the hard places and leave them behind him. His life, which becomes more complex after the elementary school period, does not allow him opportunity to overcome the weak places that the school has left in his mental make-up. He is left in a difficult position. Many adults testify that they would have profited vastly had they mastered in the elementary school such accomplishments as accuracy in the fundamentals of arithmetic, the habitual use of correct English, the ability to express themselves in writing, the ability to stand on their feet and say what they wish, and a hundred other features of adult life which can be developed in childhood if the critical difficulties are analyzed and overcome.

2. The avoidance of overlearning, of teaching the child what he already knows, and of allowing the work of the school to become too easy, is managed by constantly eliminating from class discussions subjects and materials which do not need stressing. This element of principle three is important from the standpoint of economy of time. When we spend school hours having the child spell words which he already knows, practice writing when he has already attained satisfactory speed and legibility, work at addition when his speed and accuracy are good enough, and perform like tasks, we are wasting his time.

It is disintegrating to their characters for children to work constantly with materials which are too easy for them. They come to school eager and willing to learn,

but if they do not need to make any effort to master the subject matter assigned to them, they soon lose all interest in hard work. The laziness and inability of children in upper grades is often due to teaching methods used in lower grades. They have been taught to avoid work and are not to be blamed for their condition.

The application of these principles will be considered in relation to several school subjects in the chapters which follow.

CHAPTER X

SELECTION AND EVALUATION IN ENGLISH

The Function of English. English, being the mother tongue, is one of the most valuable subjects in the curriculum. It should be made a central feature of the elementary school for it is essential from economic, social, and cultural standpoints. The realization of these values, however, depends upon what is taught in the subject called English. It is possible for children to be taught so as to reach a high state of perfection in the use of English before they leave the elementary school. It is also possible to teach the subject without any improvement resulting in reading, writing, or speaking. It must be kept in mind that English is taught in order to teach children to speak, write, and read fluently, accurately, and correctly, and to enjoy and appreciate good literature. There is no other reason for the existence of this subject as a part of the elementary school curriculum.

Oral Expression. The most important function of English is the development of the ability to speak. In a recent address President Benjamin Ide Wheeler of the University of California said, "The greatest possession a boy or girl can have is the English language; to be

able to stand on his own two legs and say things." This expresses the consensus of advanced educational thought as regards the value of the ability to speak compared with other values in English.

From the day he enters school the child should be taught to speak both fluently and effectively. Not a week should pass without each child being given opportunity to make an extended recitation in which he must organize his thoughts and express them to his fellows. Constant practice accompanied by constructive criticism is necessary to develop the power to speak. In schools where oral English has been stressed from the beginning, eighth-grade graduates often excel in quality and effectiveness of speech college seniors who have not had this early training.

This is not an overstatement of the case. For several years I have given the same tests both in speaking and writing to college seniors, and to eighth-grade children who have had oral English training Not considering individual exceptions, the eighth grade usually excelled the seniors. This was due, no doubt, to the difference in training. Those who are in college now grew up for the most part in schools which taught English " to train the mind," or for some other general reason just as indefinite. The ability to speak received practically no training and, of course, was not developed. The ineffectiveness of courses in English as they were maintained a few years ago, and as they are found in many places even to-day, may be witnessed by observation of a few high-school

or college recitations. Students who have had eight or ten years of the old style English or "grammar for its own sake" either plead inability to tell what they know or appear most pitiful in their bungling attempts to express themselves. Full-grown college seniors will stand on one leg with face averted or turned to the floor and mumble recitations which cannot be understood three paces away. Often they succeed in giving only a small fraction of what they would like to say and in leaving, perhaps, an impression just the opposite of the one intended.

There is only one method of overcoming this difficulty. We must begin as early as possible and train constantly in speaking. Heredity is a factor in the backwardness of many, but it is by no means to blame for the situation described above. It has been found that most difficulties in oral expression are readily eliminated by practice. Not only must every lesson in all subjects be an English lesson, but we must also have a daily period affording opportunity for practice and for constructive criticism of the effort.

Written English. The necessity for being able to write effectively is met with in all vocations — in some, of course, more than in others — in social life, and in the cultural aspects of living. Its importance is second only to the ability to speak. Comparisons between modern elementary schools which stress the functional elements of English and schools of the old type which teach English with no specific purposes reveal the advantage of emphasizing fluent, accurate, and effective

writing. This function may be developed by constant practice under constructive criticism, and the earlier, within reasonable limits, that it is begun the better. In the Francis Parker School the children in the first grade express themselves in writing and make dictionaries of the words whose use they are to master. By the time these same children finish the eighth grade, their ability to express themselves in writing has been developed to a state surprising to those who have not witnessed the written work of elementary grades in a school of this type.

Reading and the Study of Literature. The ability to read and interpret the printed page is essential to progress in most vocations. It is also necessary in order to learn of social developments that one may become a better social being; and it has great culture-recreational value. However, if we teach literature and reading from this standpoint, our methods and the subject matter stressed must be quite different from the methods and subject matter of the traditional school. The following factors are being made the central features of courses in modern schools:

1. Silent reading is more important than oral reading. The ability to read orally in such a way as to entertain others is of very little use to the average person. Only the few who become entertainers will need such an ability to a very great extent. Silent reading, that which interprets the printed page, is the reading which must be stressed. Too much emphasis has been placed upon the

ability to read with good expression; not enough attention has been given to the development of the ability to "tear the heart out of a book," to know what to remember and what to neglect, and to supplement problems and projects by covering a large amount of literature rather than by memorizing the statements of a text.

2. Literature studied from the cultural standpoint must be so taught that it will function in the direction intended. Too often when a book is studied in school the work is associated in the child's mind with pain and drudgery, and after he has finished it, he never voluntarily refers to it again. He is usually through with the author forever. Wide acquaintance with good books, the fostering of the reading habit, and the selection of high class material which appeals to children are three vital factors in teaching literature.

Illustrations of Functional English. In developing the above abilities the topics below should be stressed. It is easier for the teacher when these are made the essential features in his course of study, but with any course to cover it is possible to place more stress upon the important elements.

Daily practice in speaking by every child, when possible.

Written work at least once per week by every child.

The reading of a few good books in every grade, a partial reading of a large number of others, and the fostering and stimulation of the reading habit.

Grammar and the mechanical features of speaking, writing, and reading to the extent that they are helpful in a functional

way. There have been many so called functional outlines of grammar facts. The one which follows was made by Miss Amy Foote, training teacher in the State Teachers College, Greeley, Colorado. It is given in full here on account of the remarkable success of Miss Foote's work in developing power in children to speak, write, and read effectively.

The Study of Grammar

Sentence Used as a Basis of Study

1. Sentence as a whole clearly *vocalized.*
   (*a*) Subject clearly vocalized.
   (*b*) Predicate clearly vocalized.
   (*c*) Kinds of Sentences as to *meaning.*
2. Sentence types.
   (*a*) Simple:

The function of this sentence is to express with utmost clearness a single idea — to give emphasis.

(*b*) Compound:

The function of this sentence is to express an *idea* which contains two or more *equally* important *notions.*

(*c*) Complex:

The function of this sentence is to express the *central idea* in the independent clause, but at the same time to modify the chief idea with clearness and correctness. In this connection, a comparative study as to the most effective use of the three types of sentences as to *structure* and *use* should be made — each *word, phrase,* or *clause* should be placed in the sentence where it stands for the most in making the sentence correct, clear, and elegant; no needless word or words should be used; no necessary word or words should be omitted; and great care should be exercised in selecting the choicest words.

3. Modifiers.
   (*a*) Subject:
      (1) Word,
      (2) Phrase,
      (3) Clause,
   (*b*) Predicate:
      (1) Word,
      (2) Phrase,
      (3) Clause,

   } Function. Must be known for agreement, proper emphasis, punctuation, etc.

In this connection, modifiers should be considered a means of *expansion* of thought, hence the child should become conscious of the *relative* emphasis each group affords. One can now see how the *parts of speech* become at once needful and alive instead of isolated, disjointed scraps of facts: they are truly *tools* or so much *timber* with which the child *builds up* his house of speech. We need to know the names of our various tools *only* as we come gradually to *need* them as we progress from our homesteader's one-room, subject-and-predicate house, as "Snow falls," to our last and great house, the complex sentence.

4. Parts of Speech — with only such divisions as are of *practical, everyday value.*
   (*a*) Noun:
      (1) Kinds.
         Proper — for capitalization.
         Common — for comparative study.
      (2) Form.
         Possessive — especially emphasized.
   (*b*) Pronoun:
      (1) Kinds.
         Personal — for agreement.
         Relative — for agreement.

(2) Properties.
Case — for correct form.
Person forms — especially emphasized.

(*c*) Adjective.
(1) Kinds.
Proper — for capitalization.
Common — for comparative study.
(2) Properties.
Comparison — for correct forms.

(*d*) Verb.
(1) Kinds according to *use*.
Transitive — *lay, set,* etc.
Intransitive — *lie, sit,* etc.
Copulative — followed by nominative.
(2) According to *form*.
Regular, or weak.
Irregular, or strong.

Study the Principal Parts of the Verb, selecting 40 of the most commonly misused to *drill* upon.

(3) Tenses.
Present — Present Perfect. } For correct forms.
Past — Past Perfect. }
Future.

Special emphasis should be placed upon the agreement of the verb and its subject in number and person.

(*e*) Adverb.
(1) Properties.
Comparison especially emphasized.

(*f*) Preposition.
(1) Its object, *e.g.*, "between *him* and (*I*) *me*," etc.

(*g*) Conjunction.
(1) Kinds.
Coördinating; subordinating.

Used as tools in compound and complex sentences and of use to the child only in helping to show the relationship of one part of the sentence to another.

(*h*) Interjection.

(1) Function — Emphasis and surprise.

Punctuation introduced early in this study with the *sentence as to meaning*, and carried on throughout study.

Seeing all elements with which the class is capable of dealing, in relation to the entire sentence, results in completeness of syntax; viewing each part in relation to what it enables one to do in expressing thought results in *clear-cut structure*, hence improvement of speech, clearness of expression.

5. Composition — development of paragraph sense.

(*a*) Oral.

(*b*) Written.

Much attention to organization — relative values and initiative by children.

(1) Original.

(2) Reproduction.

(*c*) Paragraph Structure and Content.

(1) Indentation.

(2) Margin.

(3) Topic Sentence (subject sentence).

(4) Developing Sentences (predicate sentence).

(5) Rounding out sentence.

(*d*) Subject Matter.

(1) Personal Interests — persons, places, things.

(2) Narration and description.

(3) Letter writing.

(*a*) Social notes — invitations, etc.

(*b*) Social letters.

(*c*) Business letters — telegrams, advertisements, etc.

(*d*) Form.
(1) Salutation.
(2) Complimentary close.
(3) Place of date, address.
(*e*) Envelope.
(1) Placing of address.
(2) Spacing of address.

6. Study of literature and reading.
(*a*) Long stories.
(*b*) Structure.
(1) Narrative steps — A *feeling* for structure — growth of plot — to be read rapidly.
(*a*) For thought and picture of times.
(*b*) Oral interpretation.
(*c*) Short story or "cuttings."
(1) Oral interpretation.
(2) Character study.
(3) Humor of theme, etc.
(4) Narrative structures.
(*d*) Dramatization (discussed in detail in a former chapter).
(*e*) Poems.
(1) Music.
(2) Pictures.
(3) Power to inspire.
(4) Feeling for structure.

7. Most valuable and economic use of textbook should be emphasized.

Selection in English Based upon Growth of Children

Many Difficulties Overcome by Growth. There are, no doubt, special psychological stages in the child's development at which times it would be best to teach def-

inite groups of facts, but individual differences are so large and experimental data are so difficult to obtain that general rules are hard to formulate and even more difficult to apply in teaching. The best rule to use, after a decision has been made regarding the functional elements, is to expose the children to such groups of facts as soon as they are able to comprehend their significance. Then review them in all possible relations as often as profitable results seem to follow. Many difficulties incurred in the lower grades will be overcome as the children advance. A large number of mistakes will be automatically eliminated by explanations which can only be understood in the upper grades where opportunity is allowed the children to apply the grammar they learn. Agreement, tense forms, use of comma, transitive and intransitive verbs (*lay, lie,* etc.), and other topics must be taught when special instances involving them occur in the lower grades. Correct and effective usage should be mechanized as a matter of habit, if possible, before the use of incorrect forms becomes habitual.

Mechanics in Lower Grades and Rational Relations in Upper Grades. Everything which is a matter of mechanical memory should be mastered as early in the curriculum as possible without running counter to any of the other important factors in the child's development. When children come from good homes and do not associate with companions who use inferior English, it is possible to develop good habits of speaking and writing without teaching grammar. But every child is sure

sooner or later to come in contact with incorrect usage and should be taught those facts of grammar which will make it possible for him to discover correct and effective forms for himself when he is in doubt. If we make this aim the basis of our English work, it will be necessary constantly to connect every lesson in grammar with the writing and speech of the children. Special emphasis will have to be placed upon the *use to him* of every fact in grammar that he learns. In examining and testing we must base our records upon an understanding by the child of this use as well as upon a knowledge of the facts and processes.

Illustrative Course of Study in English Based upon Function and upon Growth of Children. Experience in a number of schools has proved that the course which follows may be taught with success in the grades suggested:

The work in the lower grades may seem too difficult, but if taught informally and made an outgrowth of the lives of the children good results may be obtained in all the three functions of English.

GRADE 1

Oral English: Constant practice in listening to and telling stories, telling experiences, and reciting lessons. Direct statements, clear enunciation, and telling language should be encouraged and stimulated.

Written English: A fair grasp of the simple sentence properly punctuated and capitalized. The writing of records, letters, and stories. (Writing may be objected to in first-grade work, but children are very anxious to write here, and they should be allowed to write in the simplest way. Formal

THE CHILDREN AS WELL AS THE TEACHER SHOULD TELL STORIES

requirements should not be made in this work, but it should grow out of the interests of the children. An example of such work as done in the Horace Mann School is described in the Teachers College Report, September 1916, pp. 330 to 343. A description of work of this kind will be found in the catalogue of the Francis Parker School.) Instruction in the use of capitals for the days of the week, months, proper nouns (taught as special instances, of course), and the pronoun I. The use of the period and the question mark. The use of the larger muscles and materials stressed. Lists of words written and bound into booklets by the children.

Literature and reading. Ability to use phonics as an aid in pronunciation should be developed. A reading vocabulary of from 250 to 400 words may be acquired in this grade by the average child. Acquaintance with a large number of good stories, and the reading of a number of primers and one or two first readers should be a central feature of the work. Reading is learned through wide association rather than by memorizing the selections of one or two books. Poetry and prose selections which are interesting to the children should be memorized. A great deal of dramatizing should be done.

GRADE 2. (Review and reëstablish all the results of the preceding work.)

Oral English: Retelling stories, telling short stories for the first time, some practice at planning short oral compositions; insistence upon clear seeing and thinking as a part of telling. Refining and improving oral English stressed in this grade. Here the children may be taught to desire correct usage, and this desire is likely to be retained. If it is not formed in the two lower grades it may be impossible to establish until after graduation from high school. At this age children respond to arbitrary assurance that certain language forms

should be used because they are right. Later they drift along by using any language they find satisfactory in obtaining what they want. The overcoming of habitual usage becomes a harder problem each succeeding year.

Written English: Papers written on anything of interest in any of the school work or on outside interests. One at least each week, its length depending upon the individual child's abilities. Stress sentence structure, and proper punctuation (all simple sentences). Teacher and children plan compositions together. Correct use of capitals made habitual; the comma introduced, abbreviations such as Mr., Mrs., and initials of personal names taught. A writing vocabulary from 300 to 500 words may be established in this grade.

Literature and reading: Study in silent reading by telling what is found on the different pages before a story or selection is read orally; reading books to find special information demanded in projects and problems; reading and dramatizing selections from first and second reader; wide acquaintance and pleasant association with the thought to be stressed rather than the ability mechanically to interpret a few selections. The ability to use phonics in the interpretation of words would be perfected in this grade. The ability to read well is not being stressed so much for the first two grades as it formerly was. Reading is one of the most unhygienic subjects on account of the eyestrain necessitated. Two ten or fifteen-minute periods a day suffice. This is one of the subjects in which growth is a large factor. Small children have been forced to undergo nervous and physical strain in learning to read in the first two grades selections which natural growth would have overcome and the strain avoided. Backwardness in oral reading need have nothing to do with a child's advancement. He may never need this ability. *The non-necessity for glib oral interpretation cannot be stressed too much.* It is hard for the small-town principal or superintendent to get away from

the fact that the children need not be able to do good oral reading for him when he visits a first-, second-grade or third-grade room. The more hygienic purely memory subjects are taking the place of the large amount of reading once taught in the first two grades.

GRADE 3. (Review to reëstablish abilities already acquired.)

Oral English: Story telling; dramatizing stories; increased development of language consciousness. Story telling used by children in connection with all content subjects such as literature, history, geography, and nature study. Stress ability to speak correctly and effectively on every possible occasion.

Written English: The beginning of a feeling for paragraphs and divisions of thought; capitals in the cases of first word in a line of poetry, first word in a direct quotation when it begins a sentence, the interjection O; more association with the use of the comma; habitually correct use of the period and question mark; some knowledge of quotation marks and the exclamation point. Stories told them by the teacher are written by the children. At least once each week the teacher and the class write on the board a story that they all know. They try to tell it in their own words in the best possible way. The members of the class discuss the paragraphing and the words used while the teacher writes.

Grammar facts which must be made to function in the oral and written work of the children as they are taught: Attention of children called to dependent clauses and the ability to recognize them developed; a functional method of illustrating these clauses is to call attention to them when they precede the main clause. A use of the comma is thus learned. Some knowledge of nouns, verbs, adjectives, and subject and predicate may be acquired in this grade. There is nothing rational about these elements of grammar, and they are learned more

readily if introduced in the third grade than if left until the upper grades.

Literature and reading: A variety of reading used to develop facility in interpretation and a taste for good literature; dramatizing and acting stories with more specific attention by the children to costuming, stage setting, and the language used; reading orally and memorizing many selections of good poetry. After becoming interested in a reader the child should be encouraged to take it home and finish it.

Grade 4. (Review to reëstablish abilities already acquired.)

Oral English: From the fourth through the eighth grades morning exercises should be a constant motive for the preparation by a child or a group of children of something special, either a recitation in a regular subject, a play, or a dialogue. The work is criticized by the class and the teacher from the standpoint of effectiveness, beauty, and clearness. Ability to use effective English developed by stressing its use on every occasion.

Written English: More attention to clearness and beauty of style; ability to think in paragraphs developed further; punctuation by use of period, question mark, exclamation point, comma; capitalization continued. Short papers written for use in recitations. Some written work at least once each week should be done; dictation by the teacher of paragraphs designed to bring into play the mechanical abilities which the children are developing.

Grammar facts, which must be made to function in the oral and written work of the children as they are taught; continuation of subject and predicate, dependent clauses, nouns, verbs, and adjectives; introduction of adverb.

Reading and literature: Wide exposure to good literature. Silent reading and ability to pick out the most important parts of texts and reference books in geography, nature study, etc., stressed; study for appreciation.

FOUR UPPER GRADES. (Review essential and difficult elements constantly.)

For the four lower grades specific treatment was furnished for each grade because it is in the first four grades that we usually make the mistake of doing little or nothing besides developing the ability to read orally. In the fifth, sixth, seventh, and eighth grades, the functional English as outlined in the first part of this chapter should be presented, as much as possible being mastered in each grade, with constant reviews. Before the child finishes the eighth grade he should be able to speak, write, and read fluently and effectively.

The Selection for Stress of the Most Difficult Features of English

Studies of Children's Mistakes. There have been quite a number of studies of oral and written mistakes of children. These have been tabulated and compared with the result that we now have a list of difficult features which is fairly representative. Studies have been made in the elementary schools of Cincinnati, Kansas City, Boise (Idaho), and in a number of other places. Charters[1] has recently reviewed all these studies, and has made a course of study for Kansas City based upon his findings. In selecting for emphasis special difficulties in English it is always better to make a study of the local community and base the work in English upon the discoveries. Teachers and pupils will both attack such a course with greater zest, for they know that they are working upon their own problems. English difficulties are often due to the colloquial irregularities of the language of the

[1] 16th Year Book of the Society for the Scientific Study of Education, 1917.

community. Thus, a course designed to overcome these is likely to be quite effective.

Majority of Inadequate and Ungrammatical Expressions Due to the Repetition of a Few Common Errors. In studies of children's errors it has been found that the majority of mistakes was due to the constant repetition of a few common errors. The large functional elements which seem to cause trouble are:

1. Self-consciousness. This is the arch enemy of all beginners in learning to speak and write effectively. It may be overcome by a wise use of sympathy and encouragement on the part of the teacher. It is difficult for a child to overcome mistakes and at the same time not hinder expression by becoming self-conscious. A great deal of practice will assist in dealing with this trouble. We must constantly keep before the teacher the fact that he must encourage expression and develop fluency before he can cure any of the child's language ills. The school has too often in the past served to dry up the source of expression. Children get the idea that it is better to say nothing than to make a mistake, and, following their idea to its logical conclusion, they learn to say nothing. When they leave school, they find that they cannot express themselves as well as those who have never gone to school. This situation is very noticeable when we apply the same idea to the teaching of foreign languages. After taking French, for from three to six years, university and college graduates usually go out without the ability to speak the language. They

were taught to have so much respect for exactness and so little stress was placed upon fluency that they mastered the former but were not able to say anything upon which they could use their ideas of exactness. Happily this situation in the teaching of foreign language is being rapidly overcome. In a few years teaching which does not enable those who study a language to speak it will not be tolerated. Exactness and correctness are very worth while, but they have no place unless at the same time fluency is developed.

2. The second large difficulty met with in developing the ability to speak and write fluently, effectively, and correctly is subject matter. Children and adults complain constantly that they have nothing to say. They are not conscious of the great world of action, life, death, struggle, pain, and joy which greets them at every step and waits to be interpreted. The same difficulty is probably at the foundation of both 1 and 2: lack of fluency.

Children and adults must be taught to see, hear, and feel the elements of the great world by which they are surrounded. Then they must practice telling and writing them. Like the artist who paints the commonplace but by bringing a certain element of it into the foreground shows its true value, the person who speaks and writes must be able to express the subtle features of life and the world to his fellows. One who has developed this ability will find it valuable to him in gaining friends, in living a truer and larger social life, in following his vocation, no matter what it may be, and in enjoying life in

any locality. Yet with all of these values ability in English expression is one of the hardest to develop, and must be constantly before the teacher and the class. We must learn to find subjects. Children must learn that thousands of them are everywhere they go; they must learn to recognize and develop them. Live language teachers are stressing this feature of English and are realizing that it is one of the central problems. The ability to use correct mechanical English is not to be compared with it, either in functional value or in difficulty of attainment.

3. The ability to organize what is to be said or written is a third vital accomplishment difficult to develop. After fluency is assured, organization must be made a constant part of English instruction. Children and adults have great difficulty in collecting their scattered thoughts and in joining them together in speech or in writing. The ability to organize the various thought elements pertaining to a subject so that proper emphasis will be given to each element, so that sufficient repetition is given every important thought, and so that all will be said that should be said, and said *when* it should be said without unnecessary statements, is difficult to develop. Some teachers contend that children in the grades are not mature enough to be instructed in this feature of speaking and writing. It must be understood that such work will have to be given to children on their level of comprehension. When it is so given, grade school children respond even more readily than college and uni-

versity students who have not been taught to organize in the grades or in high school.

Constant Stress of the Three Foregoing Elements of Speech and Writing. These three features of speaking and writing must be back of all work in English in the elementary school, the high school, and the university. They are the fundamentals of English. They develop fluency and effectiveness They are the most difficult features to teach. Therefore, they should be stressed whenever and wherever possible. Teachers in the past allowed these fundamentals to be crowded out of the course of study by the mechanics of English, or even worse, by such word juggling as is involved in diagramming, analyzing, and parsing. Whatever we do from the mechanical standpoint, and useful mechanics are very essential, we must not neglect the larger and more fundamental functions.

Special Difficulties. The mechanical difficulties which have been found to cause the most trouble are given here in the order of their difficulty. Only the useful mechanics are included. They should be introduced early in the elementary school course and repeated as often as profitable or until mastered. Special attention should be given children who master them through individual efforts. Every child should know that he has conquered an enemy worthy of his efforts when he has overcome one of these difficulties. From the ten or twelve studies previously referred to and with three years' comparative observation of eighth-grade and college students as an

aid, the following have been selected as the mechanical "demons" of English.

List of difficult English usages in order of difficulty:

1. Verbs: (*a*) Transitive or intransitive — *lay*, *lie*, *sit*, and *set* most often misused; *learn* and *teach* important.

(*b*) Copulative — to understand that a pronoun used in the predicate is nominative (It is I).

(*c*) Tense — *see*, *do*, *come*, give greatest trouble; go, run, ring, sing, drink, ask, give, write are among the most difficult. About fifty irregular verbs should be used in drill.

(*d*) Correct use of *may* and *can* more difficult on account of greater necessity for use than shall and will.

(*e*) Subjunctive mood — should be taught only in the specific cases where it gives trouble. Only the past and present of the verb to be are important.

(*f*) Infinitive, to illustrate that modifier should not separate it. (Not, to quietly sit down, but, to sit down quietly.)

(*g*) Number — disagreement with subject quite common.

2. Syntactical redundance (use of superfluous forms and words as, where are you at, overuse of and, etc.) — very common error and constant drill and attention necessary to overcome it.

3. Pronouns: (*a*) number: Everyone open *his* book (not, their books), etc.

(*b*) Case: It was he, I saw him, etc.

(*c*) Gender, especially for general use of he.

4. Punctuation — (*a*) Comma in series, especially before and.

Following dependent clause, preceding main clause, other uses of comma.

(*b*) Period, question mark, semicolon, and colon.

5. Nouns — (*a*) Capitalization of proper nouns.

(*b*) Collective for verb agreement and agreement of modifiers.

(*c*) Possessive case for correct written forms.

6. Adjectives — (*a*) Comparison most important feature and demands a great deal of drill.

(*b*) Capitalization of proper adjectives.

(*c*) Not to be confused with personal pronouns and nouns (center for central, etc.).

7. Adverbs — to prevent their use for adjectives and to prevent the use of adjective for adverbs (good for well most common). The comparison of adjectives has already been given as very important and the same may be said of the comparison of adverbs.

8. Prepositions — followed by the objective case ; pronouns afford special difficulty. (He said it to John, Henry, and *me*.)

9. Double negatives — important in oral usage but rarely mistaken in written work.

10. In any analyzing, diagraming, or parsing, examples which bring out functional difficulties should always be used. Such sentences as the one given above, " He said it to John, Henry, and me," should be used in this work. If this is done, drill is more likely to help usage, for it will throw the difficult elements of usage into the foreground.

No Time for Technical Grammar. There is no place in the curriculum for grammar which has no definite bearing upon spoken or written usage. Technical grammar should not be taught in the elementary school. Its place should be taken by " Functional English." It will take all the time we have to teach well that which is useful, and the mind will be developed just as well by working hard upon useful English as upon useless word juggling.

CHAPTER XI

SELECTION IN ARITHMETIC, SPELLING, AND WRITING

Arithmetic

Functional Values. Arithmetic is an important subject but it has not always been taught in a way to bring out its values. Parts that are not important have often been stressed to the entire neglect of parts that are vital to social and economic needs. Those who have been trained in school arithmetic only cannot solve the problems of life. This is not due to the fact that they have received too little training in the solution of problems, but that the problems they solved were not the type which furnished exercise in the arithmetical knowledge that is useful in life. The following phases of arithmetic have been discovered by investigators to be processes which must be stressed in order to make this " practical " subject truly practical:

1. *Accurate* and fairly rapid ability to add, divide, multiply, and subtract. The old school taught these fundamentals in a way that did not secure accuracy and speed in their *use*. In many places they were so taught that a child would have to begin at the beginning of a table or at the beginning of a song and repeat all that

came before the combination he wanted to use. Another failing was that the multiplication tables, long division, etc., were taught in specified grades and learned fairly well there, but they were rarely referred to again aside from chance use in percentage, interest, or mensuration. The modern way is to stress these fundamentals constantly, to require children to learn them not only in tables but each combination separately, and to insist upon *accurate* and fairly rapid solution of problems involving them. Throughout all the grades short drill periods in them should be given.

2. Business transactions. Everyone must engage in business. If money is saved, it should be invested. We must all buy and sell. Almost everybody should keep accounts. Most men come in contact with mortgages, and many of them could have been saved a great deal of trouble by a small amount of vital instruction concerning them. Life insurance is a problem which everyone must face. If he is entirely ignorant of it, he is bound to be imposed upon by unscrupulous agents. In fact, our business and economic relations with other persons, especially in this growing commercial nation of ours, demand that we greatly increase the teaching of practical commercial mathematics, and that we decrease the old-fashioned formal exercise type of work in this important subject. The following topics are being called for by business men.[1]

[1] 16th Yearbook of the National Society for the Scientific Study of Education.

Saving and loaning money.
Mortgages.
Modern banking methods.
Building and loan associations.
Keeping accounts.
Investing money.
Bonds as investments.
Real estate as investment.
Marks of a good investment.
Taxes, levies, public expenditures.
Profits in different lines of business.
Life insurance as protection and investment.
Partial payments (buying on installment plan).

Any one of these topics is large enough to take up a school year, and the time is rapidly approaching when they will be closely studied in high schools in place of a great deal of the mathematics which is necessary only to such occupations as surveying and engineering, callings which are not likely to be engaged in by many. As stated, we must all engage in business, and the better we are equipped in the fundamentals of it, the more successful we will be in managing our own affairs. Wilson has stated that the American people lose over $60,000,000 a year in bad investments. The enormous amount of pain and suffering which must follow the loss of small savings by those who have had no training in business and are ignorant of even the fundamental truths could be partially avoided by the proper teaching of these subjects in school. To teach them in a vital and functional way, however, will necessitate the reëducation of our

teaching force. It is a sad truth, but teachers do not know the important simple facts about the above topics. It is the duty of every teacher to stress concrete business transactions as much as possible no matter what his course of study may call for.

In teaching these subjects the ability to solve long and difficult problems is not so important as the understanding of their application and the ability to solve the ordinary business problems of everyday life. A superintendent of one of our large cities gave an opportunity to his son, who was in the fifth grade, to apply his mathematics to the purchase of his own shoes. It was agreed that the boy should have $14.00 per year (the amount he had asked for) to buy shoes. Although he was good in regular school arithmetic, his father noted that when he needed to solve the little problems connected with the purchase of shoe strings and the mending of shoes, he always went to his mother for help. A teacher can help the child in making this transition from school arithmetic to that of life by giving life problems along with those taken from the text. This has been discussed in the chapter on "The Problem Method."

3. The ability to add, divide, multiply, and subtract common fractions. The common fractions are almost always small. Very little work should be done with large fractions.

4. An understanding of decimals. In English-speaking countries the use of decimals is almost entirely confined to transactions involving money. In connection

with their work in decimals the children of the fifth and sixth grades should become thoroughly familiar with making change. To make change is a common necessity, and it is surprising how awkward and incapable even college students are in doing it. Somewhere in the grades a definite course involving practice with sterilized money should be given. Real money is better than a substitute.

5. Mensuration. The ability to solve problems involving the common linear, square, and volume measures is quite useful. The long explanations and difficult problems on spherical surfaces and volumes should be discarded. How to find the area of a circle should be the limit in circular mensuration.

6. Simple tables of weights and measures and their use in problems. If the foregoing are taught well, no time will be left for non-functional work, such as long problems involving greatest common divisor, least common multiple, long problems in large fractions, complex and compound fractions, cases in percentage (use equation method), cube root, etc. Long peculiar examples of the puzzle type which do not develop accuracy or the ability to solve concrete problems should be omitted.

The functional method stresses accuracy, a few problems well solved, constant attention by the child to his own difficulties, and drill upon the special *useful* arithmetic features in which the children are lacking. Then, if time is left, it should be given to enlarging the work in business arithmetic as outlined under 2.

The Disciplinary Value of Mathematics. Mathematics, more than any other subject, has been advocated for its disciplinary value. It is impossible to decide from experimental evidence whether any subject will train general powers or develop abilities transferable to other subjects. In teaching from the functional standpoint we need not worry about securing discipline, for if there is such a value in mathematics, it will be greater in the useful portions than in the useless. If we are able to train the power of sustained attention, the ability to think logically, etc., by requiring the child to solve useless problems, we can, of course, achieve the same end in a better way by using only useful materials. Without doubt, methods which require concentration, initiative, and independence of children should be used. They should constantly solve problems which do not "come out even," and which have no ready-made answers to tell them whether the work is right. They should learn to rely upon themselves and to be fairly sure that they are correct in their practice problems; otherwise they never can trust their calculations when they try to use their arithmetic in life.

Selection of Arithmetic Based upon the Growth of Children. More of purely memory work than is ordinarily done should be given in the two lower grades. In reacting from the overconfining methods of the traditional school many teachers have almost entirely neglected arithmetic in the first and second grades. The result has been that in the third and fourth grades

children are so overburdened with drill that they learn to hate it. This difficulty is overcome by teaching the memory phases in an interesting way in the two lower grades. During the second year it is possible to teach in fifteen minutes a day all the addition combinations to twenty, the multiplication tables, and subtraction. This would be too much to require since there are always a few children in each grade whose ability to memorize has not developed. Therefore, just how much shall be taught will depend upon the class. Too often the child's interest in learning useful arithmetical facts is not taken advantage of in the lower grades. He is given games to play until he gets into the third grade. Then, after being merely played with for two years, he is confronted with a heavy program. Children like to learn to add, multiply, and subtract in the first grade. Under wise teaching, they will be given enough such work to encourage them. As explained in a previous chapter, there are many advantages in learning the useful fundamentals as early in the curriculum as possible. Little need be added to the discussion of this phase of selection of arithmetic. If the mechanics are mastered in the lower grades, plenty of time will be left for the development of the functional and logical applications in the upper grades.

Selection of Especially Difficult Features of Arithmetic. The special difficulties in arithmetic have not been studied as much as have those in oral and written English. However, they seem to exist, and by overcoming them the

child is often able to master the subject in a way that would have been impossible under old-style general instruction. A preliminary study of the phases of arithmetic which need special stress is given below:

1. Accuracy. After constantly studying for a number of years the causes of mistakes in the solution of problems by children, I have come to the conclusion that inaccuracy in the phases of the work which they are supposed to know is the great difficulty. They soon acquire methods of solution, and the ordinary teacher rarely fails to correct errors resulting from mistakes in reading problems. But the small mistakes in addition, division, multiplication, and subtraction with integers, fractions, and decimals lie at the base of the majority of incorrect solutions. It must be admitted that accuracy has not been stressed and fought for as it should have been by teachers in the past,[1] and those of to-day will have to do more than they are doing in order to bring about habits of work and of thinking which will eliminate the "little" mistakes so ruinous to any form of calculation. Accuracy will not come with mere drill or practice. The child may be confirmed in making his mistakes by constantly repeating them in drill.

The following means are being employed to secure accuracy:

(*a*) From the very beginning of work in arithmetic the child is told that his work will be worthless if he makes

[1] Accuracy must not be confused with old-fashioned "thoroughness", which was not selective and was usually a waste of time.

mistakes in the parts of it which he is supposed to have mastered. No work should be credited which contains such mistakes. Inaccuracy usually results from lack of attention at a time when such inattention is inexcusable if the assignment is worth anything. Teachers too often grade a paper two thirds correct when the only reason the result is wrong is that the child was not careful with an easy addition, or something as simple. If from the first lesson he is taught that arithmetic is a science which is worthless without accuracy, he is likely to form habits in accordance with the requirements.

(*b*) Fewer problems should be assigned and more attention should be given by the teacher to the work of the children. Too often long assignments are given, and the teacher does not have time to see that accuracy is made the fundamental feature of the assignment. The children solve their problems in a lazy fashion and are more likely to be injured than helped by the work. Many times the work is not done at all, and the child forms the habit of avoiding work by discovering that requirements need not be lived up to. In this respect American teachers may learn a lesson from those in France, where great pains are taken to see that each individual child avoids making mistakes. They explain that it is better to prevent mistakes than correct them. In any case the practice of making assignments which the teacher is unable to follow up must be avoided, and no more work in arithmetic should be assigned than can properly be taken care of. This is

more necessary in a subject which is valuable only for its exactness than in one where the child's versatility may be exercised.

Extreme care, therefore, should be exercised in making assignments and in dealing with the work of the children after they have brought their papers to class. A good method is to return them to the children and to require that they study and drill upon their mistakes. Following this, the paper is again returned to the teacher, who files it as a concrete record. At the end of the month these papers are sent home along with the report cards. A child should never be permitted to crumple his paper and toss it into the waste basket before he has made a careful study of his mistakes. Both parents and children soon learn to expect the monthly budget of corrected papers, and they like them better than they do the report cards. In this way every problem that the child solves is given due attention, and as a result of his feeling the greater importance of his practice efforts, the accuracy of such work is bound to increase.

(*c*) Arithmetics with ready-made answers should be discarded. A set of answers for a teacher who is overworked may be worth while, for by using them he can tell whether or not to look for mistakes in a problem and may save a great deal of time in this way. But these answers are the cause of inaccuracy and dependence on the part of the children. When his answer is not right, the child may keep working until it is. This allows him to develop a trial and error method of procedure.

After working several years in this way he is never satisfied with his result unless it is confirmed by an "answer." When he has reached this stage in his mathematical education, he is almost worthless so far as any life uses of the subject are concerned. Mechanics, contractors, business men, and engineers are in accord with this conclusion. Children must be taught to depend upon their own answers.

2. Common Fractions. Next to accuracy in the fundamental processes common fractions cause more trouble than any other phase of arithmetic. This is probably due to the fact that our arithmetic instruction has been too artificial. The examples in the texts usually "come out even." Those in life rarely do. Thus, after six or eight years' training in solving problems which are made so that the common fraction may be avoided, it is little wonder that children and even adults have trouble. The remedy is to put problems which contain common fractions in every grade above the one in which fractions are introduced. The fraction is difficult because it has really become uncommon in the exercises of the school, but still quite common in life. As mentioned, only the fractions with small denominators need be bothered with for the others have little functional value.

3. Decimals. These cause much trouble for the same reason that fractions do. They are taught in one grade and are not reviewed. A child in the eighth grade who took up decimals in the sixth is likely to have forgotten how to point off, especially in division problems. The

only way to avoid this difficulty is to make more use of them.

4. Constant drill in every grade in all the fundamentals. It is not enough to teach a child long division in the fourth grade, fractions in the fifth, decimals in the sixth, etc., and then expect the regular work to take care of the exercise he needs in these subjects. A short period of drill (from three to eight minutes) should be given daily in all the functional fundamental operations until they have become second nature. This drill period will not take the place of the use of these fundamentals in the solution of problems, but it has been found very useful when treated as a supplement to such work.

Spelling

The Functional Value of Spelling. Spelling is valuable chiefly for conventional reasons. Few persons misspell so badly that those who read cannot understand what they have written. He who does not spell correctly, however, will find difficulty in securing positions through correspondence, and is likely to be rated as poorly trained by certain classes of society. The handicap caused by inability to spell is out of proportion to the actual need for the ability, but few will need to undergo such a handicap if school authorities will profit by the knowledge developed by modern investigations of the teaching of spelling.

Early Development of Spelling Consciousness. The child should learn to spell as early in life as it is possible.

He must develop a spelling consciousness early in the grades and learn to give attention to peculiar words and to take pride in correct spelling in all his writing. It is impossible to teach the child to spell if his attention to the words he learns goes no farther than the spelling lesson. He should be interested in learning to spell difficult words whenever he needs to use them.

This spelling consciousness and interest in learning to spell are fundamental in the development of spelling ability. Therefore, just as good English should be made a central feature of every lesson, correct spelling should be taught in all written work. Not until the child has acquired the habit of being careful to spell correctly whenever he writes is his spelling ability assured. It is impossible to teach him to spell all the words he is likely to write in life, but the spelling consciousness will cause him to master new words and to use the dictionary in spelling those of which he is doubtful.

The Poor Speller Is the One Who Needs Teaching. Too much was made of good spelling and too little attention given to bad spelling by teachers in the past. Most of the methods used tended to help those who did not need help, and little or nothing was done for those who were poor spellers. The old method of "spelling down" allowed good spellers to perform while poor spellers listened to them. The method of calling attention to the person whose record continued to be 100 per cent and ignoring those who did not get 100 per cent produced like results. Good spellers usually inherit their abilities. It is not a

mark of good teaching to have a record on the blackboard showing that one or two children in a room have been perfect in spelling throughout the year.

After the spelling consciousness has been formed, the teaching of spelling should focus upon those who find difficulty. The others are likely to learn to spell no matter how they are taught. This subject does not need to be taught to all children above the sixth grade. In the seventh and eighth grades and even in high school an intensive campaign should be carried on in order to help the poor spellers. By evaluating our materials and methods and by making them conform to the needs of the individuals who are to be taught, we can do a great deal for poor spellers even after they have entered college. Merely to pronounce words which are to be written in vertical columns will not help these persons.

Methods of Studying and Learning. There has been great advancement during the last decade in our knowledge of how children learn. We no longer assign a long list of words to be learned, require that they be written in a spelling book, and then never refer to them again. The following points are being stressed in spelling methodology to-day:

1. Not more than two or three new words should be given each day. These should be accompanied by several review words taken from previous assignments.

2. The method of studying difficult useful words and writing them in vertical columns is worth retaining. It has been claimed that ability to spell gained in this way

does not transfer to the use of these words in writing compositions and letters. However, investigations point to transfer of from eighty-five to ninety per cent. Cornman, who first studied the subject, concluded that there is little if any transfer from column to dictation work. Wallin contradicted this statement and went to the opposite extreme. Cook and O'Shea tend to confirm the conclusions of Wallin. Tidyman and Brown found considerable transfer but not so much as Wallin or Cook and O'Shea. It is important to all such conclusions that the investigators discover how many of the words they teach are already known by the children. When Tidyman and Brown did this, they found about twelve per cent loss. This means, therefore, that of every eight words learned in vertical columns, seven will be spelled correctly in dictation.[1]

3. Constant use should be made of the words learned and words *which are used by children* should be selected for their spelling lessons. It is not worth while to learn to spell words whose meanings we do not understand. The teacher must insist that the child be responsible for his spelling in all his writing, and that he attempt difficult words in this writing. Often the child does not use the word he wants because he is afraid of spelling it incorrectly. Some definite means should be employed to stop such a practice; it is more common than one not closely connected with the work of children would imagine. The development of a good writing vocabulary is stimulated in chil-

[1] See Elementary School Journal, Dec. 1917.

dren by giving attention to the words they use, giving better grades for wide usage, and recognizing in regular class periods individual efforts in this direction. Spelling is only a tool, and the child should be impressed constantly with the idea that it is better to use a good word, even though he misspell it, than to substitute an unsatisfactory easily spelled one for it.

4. In their study of words the children should be taught to concentrate upon peculiarities rather than to attempt to learn by many repetitions. The old method of repeating each word twenty or thirty times orally or in writing is being discarded.

5. For most children words should be visualized. This may be accomplished by exposing them on flash-cards to the class, or by writing them on the blackboard. The visual exposure is followed by oral pronunciation. The word is then removed from the child's sight and he writes it from the visual-auditory imagery which he has. This gives him a large visual picture of the word accompanied by both auditory and motor impressions. In order to write it correctly after a momentary exposure, he must concentrate upon its peculiarities. This insures attention with all the mental powers. The old repetition method became a sort of automatic process after a few words had been learned by it, and the child might repeat the letters in a word a hundred times and not remember them any better for it.

Some General Difficulties. Two special methods of studying words are (1) grouping words which fall under

specific rules, and (2) studying individual words which are difficult owing to peculiarities of spelling.

Under (1) the largest group is the phonetic. The majority of the words that are commonly written are spelled just as they sound. The first step in learning to spell, therefore, is the mastery of letter sounds and their application in spelling. Following this, every word which is not spelled as it sounds will call attention to itself because it is different from the majority of words. If a good grounding in phonics is not accomplished early in the school course, spelling is bound to be difficult, for the child will have nothing to go by except his memory of individual words. The common method of grouping words into families is not very helpful. The child must have a wide experience in sounding and spelling phonetic words which are not related or grouped. The fundamental feature of this work should be to develop the ability to spell by using the letter sounds and to learn as early as possible the words which are not spelled as they sound. The large phonetic groups of words are the only ones that are usually taught through the principles involved.

A Few Rules May Help Poor Spellers. Poor spellers, especially poor visualizers, should be given every rule that is likely to help them. Many of the so-called "rules of orthography" have so many exceptions and are so long that they are more confusing than helpful. Adults who are naturally poor spellers, and who have overcome to a certain extent their incapacities in this

field, testify that certain rules have been quite helpful to them. The rules which follow are given in the order of their importance based upon the use made of them by several hundred college students. These rules are usually remembered by catch words rather than in sentences. They are given here in the forms in which they are most often used.

1. *Alice* (*i* follows *l* and *e* follows *c*), a word used by a great many persons in order to remember that when *e* and *i* form a digraph having the sound of long *e*, the *e* precedes the *i* after *c* and *s*. In most other cases the *i* precedes (*receive, believe, retrieve*, etc.).

2. *Coming*, used to remember that when a word ending in silent *e* takes a suffix beginning with a vowel the *e* is generally dropped. (Exceptions: words ending in soft *c* and *g* retain the *e* when *able* is added, — *traceable, manageable*, etc.) *Coming* or a similar word is also helpful to many in keeping in mind that when such a word has a final *e*, the consonant is not doubled before a suffix.

3. When a syllable beginning with a consonant is added to a word ending in *e*, the *e* is retained with the exception of such words as — *duly, truly, awful, judgment, abridgment, acknowledgment*, and *argument*.

4. *Lying* or *dying*, used to remember that words ending in *ie* change the *ie* to *y* when a syllable beginning with *i* is added.

5. *Altogether*, used to help remember that compounds of *all* usually drop the final *l*. The poor speller must also

learn that other compounds of English words usually retain the word in full. The exceptions like *joyful, fulfill, pastime, until,* and *wherever,* must be memorized.

Almost Everyone Uses Rules. Three weeks' drill on these five rules given to a poor speller in the eighth grade improved his spelling fifty per cent. A study of the different ways poor spellers strive to spell correctly will convince anyone of the necessity of a few rules such as the above. However, they should be few and learned concretely from words. These will not insure accurate spelling; they will merely increase the ability to spell. As a rule the poor speller constructs rules for himself from his word experiences. These are very likely to be incorrect and have more exceptions than words to which they apply. One college student reported that he had formulated for himself rule 3 given above, but that he did not know that there were any exceptions. He was caused a great deal of trouble on one occasion by applying his rule and at that time learned of the exceptions. Those who insist on ignoring all rules and in teaching by special individual words cannot escape from the fact that most persons are using rules no matter how they were taught, and that the majority of the rules used are incorrect and misleading, for they are made up of a few striking experiences of the person who uses them.

Some General Difficulties. Prefixes and suffixes cause a great deal of trouble. Consider for example the prefix *mis :* when the poor speller learns that there

is only one *s* in this prefix and that the *s* is doubled only when the root word begins with *s*, the whole difficulty with words beginning with *mis* is overcome. The *doubling of consonants* is another great difficulty. Some reference has been made to this in the above rules, but it is very difficult to find rules which are helpful in this case. It is well for the poor speller to learn that monosyllables usually double *f*, *l*, and *s* when at the end of the word. Other letters are not doubled unless for special reasons. The exceptions, *clef*, *as*, *has*, *is*, *his*, *us*, *of*, *if*, *gas*, *yes*, *thus*, *was*, are common words and are usually learned through association. If any rule is taught, the exceptions to it should be memorized. A university professor reports that he must constantly look up small words such as bug and gas to find whether or not to double the final consonant. He found this rule quite helpful. This man, it must be understood, was a poor speller. He could not remember individual words. As previously stated, it is for just such persons that spelling is taught. They cannot be taught to remember how to spell all the words in the dictionary. They must be taught *phonics*, *a few useful rules*, and the *common difficult words*, and this must be followed by as *wide an association with common words in writing* the English language as is practicable. A poor speller who does little writing will find it almost impossible to become a good speller.

The rules and special difficulties which are given above are only illustrative of a type of study which must be

made before we will be able to help the poor speller as much as we should. When the teacher knows just wherein the child who makes mistakes is weak, he can help him in an intelligent way. Every poor speller should be made the subject of special study. This is not difficult. The child is usually willing to coöperate. The peculiar method he uses to overcome the difficulties he meets, and a record of his type mistakes will give the teacher a cue as to how to help him.

The Selection of Special Words to Teach. There have been a number of careful studies of vocabularies, and lists of words have been made which have been quite helpful to the teaching of spelling.[1] No one who is acquainted with advancement along this line still clings to the old method of teaching words regardless of their difficulty or the likelihood of their use.

With the exception of the " hundred spelling demons " selected by Jones, none of the compilers have selected lists which should be taught because of the special difficulties of the words. The problem of the usefulness of

[1] Eldridge, R. C. Six Thousand Common English Words.

Ayres, L. P. Spelling Vocabularies of Personal and Business Letters. Russell Sage Foundation, N. Y. 1913.

Jones, W. F. Concrete Investigations of the Material of English Spelling, U. of S. D. Vermillion.

Cook, W. A., and O'Shea, M. V. The Child and His Spelling, Bobbs-Merrill, 1914.

Studies have also been made by Studley and Ware, a list made at Johnstown, Penn., and another by W. E. Chancellor. From the above lists Pryor compiled one for the elementary grades. This is found in the 16th Yearbook of the National Society for the Scientific Study of Education, 1917, 86–110.

words has been fairly well solved. But it is not necessary or possible to teach with the same emphasis all the words a child is likely to use. Special words which he is likely to find difficult must be taught and constantly reviewed. Words giving trouble to children in the grades, especially eighth graders who were ready to enter high school, to college students, and to poor adult spellers have been selected from the Ayres, Jones, and Pryor lists for the list which follows. Common words in children's vocabularies are mostly learned by constant association with them. The adult is likely to have little difficulty with most of them. The minimum essential list of Pryor contains many words which are not difficult for any child and may be taught by usage. It is necessary to base the list selected for stress upon the difficulties of children who are finishing the grades, college students, and poor adult spellers in order to find those words which are not likely to be learned by association and usage. This list makes no claims at completeness; it is given not only for its usefulness but to illustrate the principle of selection in accordance with special difficulties. The difficult parts of the words are italicized.

A List of Useful Difficult Words Based upon Three Years' Experience in Using Other Lists

GRADE ONE

In the first grade the child should be taught to spell common words which are phonetic. His interest in spelling should be stimulated, and in all his writing he should

spell correctly. A great deal of oral spelling should be done in this grade. No special list can be selected, for it will depend upon the literature used in reading.

GRADE TWO

A great deal of phonetic spelling should be done in this grade continuing the work of the first grade. In addition to this the child should be introduced to a list of words which are not spelled as they sound. Words which form a slight transition should be used at this time. The following have been selected with this purpose. Many of these will be learned by association later on, but they are useful in making a transition from the purely phonetic words to those which are spelled contrary to the rules of sound.

add	bring	deep	evening
air	brought	dirt	eye
asleep	burn	done	fair
August	carry	do	few
aunt	catch	doctor	first
been	chair	does	foot
bear	change	dollar	four
better	claim	door	fourth
bill	coat	down	fresh
bird	comb	draw	front
black	come	drink	full
blue	could	drown	girl
boat	count	each	goes
boil	cross	early	God
bread	dead	eight	good
bright	dear	even	grass

great
grow
guess
half
hair
hang
head
hear
heard
heart
here
jump
knew
knife
lard
large
leaf
lesson
meet
near
new
only
own
root
said
says
shoe
sky
soap
teeth
they
took
were
write
wrote
you
young
your

GRADE THREE

about
above
across
act
afraid
again
almost
animal
answer
appear
apple
arrest
attend
avoid
beauty
because
between
blossom
board
bottom
breakfast
breath
build
bridge
brindle
bury
busy
butter
button
carried
circle
clean
climb
close
cloth
coarse
color
common
cough
country
cousin
crowd
daily
danger
daughter
dinner
divide
double
earn
earth
easy
else
enough
explain
family
February
field
fierce
figure
fortune
forty
friend
fruit
grain
heavy
hoarse
honest
hour
inquire
island
its
(no apostrophe)
jail
knee
tough
learn
leather
leave
lemon
lightning
(no e)
lose
(not oo)
machine
measure
miller
minute

miss	picture	severe	tried
money	piece	sleigh	until
much	pleasant	stopped	walk
(not tch) [1]	primary	sure (not sh) [1]	watch
music	prompt	table	wear
notice	prove	thread	which
obey	quart	there	whistle
o'clock	reach	their	whole
often	ready	threw	wrap
once	ribbon	through	women
parlor	rough	tired	

GRADE FOUR

able	collar	neighbor	separate
ache	inquire	neither	several
according	furnace	ninety	shoulder
allowed	guard	palace	soldier
angel (not le) [1]	guide	parade	stairs
attack	itself	pass	throat
author	justice	pigeon	to-morrow
beginning	lying	pleasure	traveler
biscuit	lonesome	pledge	trial
breathe	matter	practice	trouble
canoe	mayor	raisin	unless
carriage	metal	region	village
chain	mettle	roof	weather
chief	mischief	saucer	weigh
civil	mountain	scholar	wrong

GRADE FIVE

address	already	arrive	beat
against	agreeable	awful (not awe) [1]	beet

[1] The wrong form is given in these cases so that the teacher will emphasize the correct spelling. Incorrect practices should not be mentioned before they are made.

birth	debt	heaven	passenger
berth	defeat	height	persuade
bruise	describe	(not th) [1]	pour
business	destroy	hospital	press
cannot	different	instead	promise
can't	disappoint	journey	roll
cement	familiar	judge	scratch
coast	famous	language	succeed
collect	favorite	length	success
column	fever	mail	tear
course	fifth	male	victim
court	final	medicine	view
damage	firm	merely	

GRADE SIX

assure	athletic	command	general
accept	attendance	committee	genuine
acquaintance	baggage	complete	glorious
appetite	balance	convenient	guest
appreciation	breast	criticise	imagine
arrival	bargain	develop	interrupt
assist	benefit	dictionary	innocent
attempt	brief	difference	luncheon
avenue	calendar	disappear	mountain
acknowledge	captain	engage	necessary
advertise	catalogue	entire	oblige (not d) [1]
annual	certain	estate	occasion
apply	contain	existence	office
appoint	career	factory	official
appreciate	cemetery	favor	particular
arrange	character	finally	patient

[1] The wrong form is given in these cases so that the teacher will emphasize the correct spelling. Incorrect practices should not be mentioned before they are made.

pavement	preliminary	special	superintendent
peculiar	privilege	strength	testimony
private	receipt	salary	unfortunate
pursue	restaurant	secretary	valuable
proceed	recognize	session	volume
physician	recommend	similar	vacant
practical	religion	sufficient	witness

If these few hundred words are mastered by each child and the remaining time given to his own peculiar mistakes and difficulties, greater efficiency in everyday spelling will result. There are very few *useful difficult* words which are not included in the above lists.

In addition to this list there are many peculiar words with which children will experience little difficulty if the peculiarity is pointed out to them. Such words as *catarrh*, words which begin with *qu*, those that begin with silent *k*, such as knife, the *ch* words which do not sound the *h*, as *chord*, *character*, etc., make up a small list easily mastered through association. The days of the week, stressing *Wednesday*, the months of the year, stressing *February*, the seasons, holidays, and the common proper names of a community should be taught.[1]

Writing

The Function of Writing. Writing is a medium for expressing the English language through written words. Its conventional value has decreased considerably in the last decade. This is probably due to the increased use

[1] The Everyday Spelling Books, Bobbs-Merrill, are modern and scientific from all standpoints.

of typewriters. However, if it is possible to attain without too great effort, the ability to write well is very worth while. The conventional reaction to good or poor writing is similar to, although not quite so strong as that for spelling. It is out of proportion to the actual value of writing, but since it exists, no child should be allowed to suffer unnecessary difficulties in social and vocational life because of neglect of this side of his education in the elementary school. There is better reason for spending time in developing the ability to write rapidly and legibly than there is for spending time in technical grammar or a great deal of our arithmetic.

Legibility and a certain amount of speed are the only essentials in writing. The ability to wield the pen in an artistic manner may be valuable to a few who desire to become pen artists, but since most persons will write only to communicate their thoughts, writing from the artistic standpoint should have no place in our elementary school curriculum. The law of diminishing returns, when applied to writing, wou d probably fix a score of seventy on the Ayres Scale as the limit beyond which practice is unprofitable.

Points to Stress in Teaching Writing. In developing proper speed and legibility the teacher should stress the following:

1. Position. The child should habituate himself to the proper position for good writing as early as possible. He should sit with his back balanced in a position of rest. Too often the teacher's admonitions regarding position

cause the child to become rigid and to take a position which constantly subjects him to strain. Position is very important in the acquisition of the ability to write rapidly and well; and if a straining position is acquired, the child's writing will always be cramped and will become worse as he continues to write.

2. The method of holding the pen or pencil. This should afford an easy restful grasp. The pen or pencil should not be held too close to the end.

3. Maintain the uniform slant of letters and the alignment of the words across the page. It is not necessary to teach any special slant, but all the letters should have the same slant.

4. A definite, legible ideal for each letter which should be persisted in through all the grades.

When the above points are emphasized, the child has something definite to work for in improving his writing. These elements have been found to be the important ones in the development of the ability to write rapidly and legibly.[1] If they have been constantly emphasized as basic features, the child should have little difficulty in attaining a score of seventy by the end of the sixth grade. He should work toward being excused from practice when he reaches seventy in everyday work.

From the standpoint of both hygiene and efficiency all writing periods should be short. From ten to fifteen minutes is sufficient. *The muscular movement is not*

[1] Experiments reported in 17th Yearbook previously referred to. See also Freeman: The Teaching of Handwriting. Houghton Mifflin Co.

necessary, although most specialists in this subject insist upon it. School administrators agree that it is desirable, but many are not requiring it. Some children are so disturbed by being required to use it that results are not worth this extra effort. It becomes especially obnoxious when all writing in all subjects is supposed to be done by muscular movement. The use of the typewriter in all occupations which require very much writing has made the acquisition of any special movement unnecessary. Those who find special difficulty with it do not need to go through six or seven years of agony for such a valueless accomplishment.

CHAPTER XII

METHODS WHICH FOSTER HEALTH

It is not the intention in this chapter to attempt to treat of school or child hygiene but rather to give to the average teacher methods and practices which foster health and to point out those which militate against it. There are so many peculiar ideas about hygienic methods of dealing with school work that it seems wise to consider in a book on practice those features of the subject which may and should be employed everywhere.

Hygienic Methods More Efficient. Everyone should understand that there is no conflict between hygiene and the most effective, lasting, and rapid learning. Learning cannot be lasting or profitable if physical and mental health are impaired. *Learning never demands that children be injured.* Wherever education and vitality seem to be opposed to each other, there is a mistaken theory or inadequate administration. Modern schools, that is, those which truly represent modern theory, are protecting health and at the same time are obtaining results which in both quality and quantity surpass those of the traditional school. One of the most important factors in the efficiency of some modern schools is the large

A Heritage which a Great Educator Left to the Children of Colorado. His Teachers often Chafed because He Put Money into this instead of into "Essentials." The Development in a Barren Country of a Place like this in which Children may Play is Far Better than the Construction of Concrete Buildings

amount of attention given by the teachers to making their instruction both mentally and physically hygienic.

Health Methods Growing in Popularity. The matter of more healthful methods and practices is being given great consideration by schoolmen in all countries. In Monroe's "Cyclopedia of Education" a great deal of space is given to this subject. Burgerstein devotes over four hundred pages to it in the second edition of his handbook. He emphasizes the hygienic importance of the mental habits formed by education and of the secondary effects of instruction. In Rapeer's "Educational Hygiene,"[1] A. S. Beik makes the statement, "The demands of instruction should be fitted first of all to the child's innate ability, stage of development, and condition of health, after which he should be given as nearly as possible optimum conditions in which to work; work and rest should be properly alternated in order to avoid injury from overfatigue; finally regard should be had for the laws of mental health, care being taken to develop proper habits of attention, association of ideas, and emotional response."

Health and the Early Development of Special Abilities

Rapid Early Development Should Be Watched but Not Opposed. There was a time when educational thinkers and leaders, in reacting against the cramming of unselected subject matter into the heads of small children, created the impression that precocity in itself was dangerous. This idea soon gave a wide prevalence to the notion that

[1] Scribner's, Boston, 1915, p. 585.

mental labor or activity of any sort, especially when connected with school subjects, is not advantageous before the age of six, eight, nine, or ten years, the age limit depending upon the bias of the person making the statement.

However, a study of the data upon which such conclusions were based shows that arrests, neuroticisms, special failings in essential mental and motor abilities, and ill-health in a large per cent of "especially bright" children are due to the methods used by teachers and to the ignoring of certain fundamental factors of growth such as exercise, a suitable amount of play, proper social environment, etc. The exceptional mental ability may have been developed at the expense of more important features of life; of itself it could not have been the cause of the evil results. In fact, school authorities are beginning to expect better results in regular school work and an earlier mastery of the fundamentals of such subjects as arithmetic, spelling, writing, etc., as an outcome of using methods which foster rather than militate against children's physical growth and happiness.

An American physician [1] who has made a study of precocious children with reference to their health concludes: "Of precocity, the relationship to neuroticism has often been declared; but our analysis will show the error of this view unless it is greatly qualified. While it is true that many children apparently precocious in an intel-

[1] Williams, T. A. (M.D.). Intellectual Precocity. Ped. Sem. Vol. 18 1911, pp. 85–103.

lectual sense are unstable mentally, incapable of sustained effort, and become adult nonentities without special capacity, yet these misfortunes are by no means functions of the precocity of these individuals; but are due to faulty bodily hygiene, intemperate and ill-timed mental labor, and to excessive emotional stresses in an individual who has not learned to master the moods.

" As a matter of fact proper mental labor is needed for sound psychic health. Physiologists know that a disused organ is more liable to disintegration or to become diseased than one which is regularly used.

" What is true of structure is true of functional power. From ballet dancer to violin virtuoso, artists must be trained from early youth. It may be objected that this is true because muscular agility is required, but this objection is only superficial, for the dexterity of an artist is made possible not in virtue of superior coördinations of movements themselves but by means of the superior speed and accuracy of the guiding mental processes which reside in the brain."

Feeling Tone and Social Disposition Important. Dr. Williams goes on to say that the most important element of instruction, whether given early in the child's life or later, is " feeling tone." If he is happy in his work, it is not likely to injure him. This happiness is also essential, he says, for rapid and thorough learning. He gives a number of pathological cases which he has cured by " reëducation," and he constantly maintains that there is no scientific evidence for " the facile accept-

ance of slovenliness and inefficiency as a normal quality of young children."

Extraordinary abilities in school subjects developed by a very young child should be watched closely by teachers and parents. Dolbear,[1] who made a study of precocious children of the past and present, came to the conclusion that all such cases should be closely observed by those who have them in charge. If, as Miss Dolbear says, many are "very much spoiled" and their individualities have been developed to the neglect of their social natures, their training has not been wisely considered. Many suffer physically. Others have poor motor control. The Sidis child is mentioned as being especially deficient in both social and motor abilities.

Factors to Keep in Mind. The teacher is not likely to go astray in dealing with such cases if he follows the following principles:

1. Is the "bright" child vital and healthy? If not, he should be encouraged to do less indoor sedentary work and to play out of doors as much as possible. His mentality should not be ignored, and he must be given tasks that are worthy of his efforts. These tasks should be of short duration, however, and should not keep him indoors for long periods.

2. Does the child who is extraordinary in his school work get along well with his fellows? Many so-called bright children are often the dullest of companions and playfellows. They fail in later life because they

[1] Precocious Children. Ped. Sem. 1913.

have not used their brightness in learning the ways of the social world. When such a child is discovered in school, the teacher should urge him to play more with his fellows. He should be taught that the ability to take and hold his part in a good game is just as important as being able to recite well in school. Such a child should not be allowed to come to the teacher with stories about impositions upon him by other children. He must learn to hold his own in the great world outside the schoolroom.

3. Any indication of nervousness, overemotional reaction, or faulty motor adjustments in such children should be looked upon as very grave, and the teacher should do everything he can to alleviate such difficulties. If they are allowed to run, the future of the child is not hopeful. The proper hygienic surroundings with removal of strain of every kind will do much to relieve these troubles.

4. When the child is normal in every other way, when he plays well, coöperates and does not quarrel unduly with his companions, and when his emotional attitude is one of healthy accomplishment and joy in living, he should be given every opportunity to use his powers to the fullest extent. However, it is usually best to suggest that he develop powers and do mental work outside the course of study. Such a child will not be benefited nearly so much by hurrying through the school requirements and finishing early as he will by devoting his extra abilities and energies to something of importance

to him. The common school furnishes little more than a common education. The child who is capable should reap the rewards to which his capacity entitles him. The following outside activities are suggested for such children:

1. Physics, electricity, wireless, etc.
2. Music, piano, violin, voice.
3. Wide reading in books of a high economic, social, and cultural value.
4. Chemistry; a laboratory at home and constant experiments developed Edison's present power and mentality.
5. Gardening, nature study, biology, the care and study of animals. Agassiz was famous for such works at the age of ten. Burbank was developed in this way.
6. Extra energy spent in learning a trade. John Rennie, the great English engineer, received impetus and a basis for his career by working at odd times with a blacksmith.

The reason for developing outside interests for these children is that they tend to become and to appear abnormal if they are in the same classes with children who are both larger and older than they. As he approaches adolescence this type of child should have some dominant life interests to which to devote his extra energies in this period of stress.

The four principles given here should, of course, be applied in our treatment of normal children. The precocious or "extra bright" child, however, needs especial

attention from this standpoint. The backward or deficient child needs attention of a different nature.

Backward Children

The Slow Child Needs Encouragement. Special care should be exercised with backward children in order that they may not become nervous under the strain of knowing that they are not coming up to expectations. The teacher's motto should be "encourage." Every means should be exhausted to discover and eliminate the *causes* of backwardness. If the child has poor health, the parents should be informed, and ways of improving his health should be suggested. If it is evident that he is naturally slow, every opportunity to make him happy with his lot should be taken advantage of. His special capacities should be brought to the front. If he has any powers, he should be told of them. Too often the school is a means of causing backward children to become more backward. Due to constant scolding and failure in school many persons who are fairly capable lose confidence in themselves. Others become soured on the world and society when they might have become happy efficient citizens under proper stimulation and encouragement in school.

Unimportant Defects Should Not Be Emphasized. Very often unimportant types of backwardness are made too much of by the school. I have in mind a boy who was held back in school and made nervous because of inability in oral reading. A teacher who did not

overstress this type of performance so encouraged him that he was able to skip a year's work. His attitude towards both school work and life was materially improved. Backwardness in only one subject should never be allowed to retard a child.

Arrested Development

Peculiar Arrests Very Frequent. One of the most important problems of mental hygiene in the school is to teach in a way which will prevent arrests and destructive by-products. The dangers of arrests have long been recognized by leaders in education. Many years ago Dr. W. T. Harris spoke of them as follows: "A severe drill in mechanical habits of memorizing or calculating, any overcultivation of sense perception in tender years, may so arrest the development of the soul in a mechanical method of thinking as to prevent further growth into spiritual insight." [1]

Although such cases have been noted and commented upon now and then, they have not been brought to the foreground as they should have been in books on method. One of the best studies of arrests is that made by Dr. Norman Triplett. He discovered that many individuals in college classes were sufferers from poorly directed or overzealous pedagogy applied to them in childhood. He collected these cases and reported them.[2] "About 700 of these cases have been collected," he writes. "It is not

[1] Psychologic Foundations of Education, p. 142.

[2] Pedagogical Arrests and Peculiarities. Ped. Sem. Vol. 12, 1905, pp. 141–157.

difficult to find them; indeed the majority of most classes find that they have some phase of the so-called arrests."

They occur in most of the "common branches." They should be expected here, for the traditional school is likely to overstress this side of education and to teach such subjects as geography, history, reading, writing, and arithmetic regardless of all pedagogical principles. Some of the arrests described by Dr. Triplett are:

Geography. Overemphasis of places on maps and of map-drawing has resulted in the development of a map imagery which cannot be overcome. When the individual wants to think of some place on the earth, a map comes up instead. These cases are always found among persons who are visualizers Peculiar methods and practices have been continuously used until a special image is welded into the child's consciousness, and he is never able entirely to eradicate it. Some statements that illustrate this are:

"We drew the coast line so often, especially the New England coast, that each indentation as it appeared on the map stands out as vividly as it did then; the result is that I never think of those bays as bodies of water but as small blue spots on the map."

"At eight years of age I entered a class in M's geography, a textbook with supplementary atlas. Several years were spent upon map questions; today the mention of even a familiar place suggests a map rather than a picture of the place."

Methods of Preventing. Such cases, and they are quite frequent and of many varieties, reveal that teachers must teach more concretely, use more thinking and

less drill and memorizing, and sound children constantly as to the concepts they are acquiring. Overdrill and extreme requirements in the memorizing of symbols must be avoided.

Arithmetic. Constant pressure with scoldings and threats often develops an unfortunate mental attitude towards this subject which is carried through life. A child, who, properly taught, may have mastered the essentials of arithmetic, may lose this ability entirely. It must be kept in mind that in every class there are likely to be one or two children who are by nature lacking in this type of intelligence. It is best to let them work slowly and acquire the subject by growth rather than bring about overstrain. " Counting " is a type of hysteria. A nervous individual who has been strenuously trained in mathematics may acquire a mania for counting. " Counters " are not always caused by overpressure or overdrill in arithmetic, but it can readily be seen that severe pressure in this subject would aggravate hysterical natures. Weird number forms are also often a result of bad methods of teaching.

Special Causes of Arrests. That peculiar attitudes towards any subject may be developed in children by improper teaching methods cannot be doubted. The teacher should, as far as possible, avoid doing anything which is likely to fix the child's attitude against a subject, or develop a method of thinking which will keep him " in a rut," or militate against his progress. Some special causes of arrests are:

1. Too much stress placed upon a subject too early in life.
2. Threats or overstrenuous demands by teachers.
3. Failing a child for deficiency in a single subject.
4. Overdrill and not enough application.
5. Constant association with symbols and not enough concrete work.

Home Study

Over thirty years ago the Boston board of education passed a resolution as follows: "Home lessons in arithmetic should be given out only in exceptional cases." President Walker of the board said, "Over and over again have I had to send my own children, in spite of their tears and remonstrances, to bed, long after the assigned tasks had ceased to have any educational value and had become the means of nervous exhaustion and agitation, highly prejudicial to body and to mind; and I have no reason to doubt that such has been the experience of a large proportion of the parents whose children are habitually assigned home lessons in arithmetic." [1]

An important factor of home study is the character of the home. For example, Schmidt, quoted by Burnham, found in one city 25,679 dwellings in cellars; 3385 dwellings on the fifth story; 343 still higher; 560 ground stories with 175 to 200 tenants each; 154 with 226 to 250 in-

[1] Burnham, W. H. The Hygiene of Home Study. Ped. Sem. Vol. 12, 1905, pp. 213–230. Dr. Burnham is quoted largely in this section because he is the only American who has gone far into the field of the hygiene of instruction.

habitants each ; and 6 with a still larger number of people. Further it was reported that there were 1749 common kitchens, and the climax of misery was found in 4086 dwellings which consisted only of a kitchen. In dwellings with only one heated room the number of inhabitants was 14,100.[1]

Then the work a child must do outside of school, the fact that he will probably be helped more through recreation than study, and the slovenly habits formed by dawdling over irksome tasks, all point in the direction of fewer home assignments. To quote Burnham further: " The trend of opinion now is rather strongly against the giving of home tasks. The opinion of hygienists is that it leads to overpressure, at least in many individual cases. The opinion of many school men also is that it leads to deception and slovenly work, and that only a minimum amount is necessary.

" In the case of the poor, where home conditions make hygienic study impossible, or where so much work must be done by the pupils that there is no time for study, the allotment of home tasks should be altogether condemned. In the case of the well-to-do, where the parents wish to share in the education of their children and where outside tasks like instruction in music, domestic duties, or the l ke may be quite as mportant as the school work, the allotment of home tasks is likewise undesirable. The safe rule wou.d seem to be that no home work should

[1] Berlin in 1904. Burnham notes that many of our own cities are not far in advance of this.

be prescribed; but where this seems desirable, suggestion for spontaneous work on the part of the pupil may well be given."

The best time to study is during the day at school. There should be provided, from the fifth grade up, ample study periods. At this time the children should be taught hygienic and effective study methods.

Child Health and Arithmetic

Length of Periods. In the study of this subject growing children must be confined within school buildings and must sit in school seats. It is apparent, then, that there is a limit to the amount of time which may be profitably spent in this way. Too much time, especially in continuous periods, not only militates against vitality but also results in less rapid and less thorough learning. Kirby, Thorndike, Burnham, Stone, Rice, and Brown report that less time spent more efficiently will result in better learning in this subject. This is true especially in drill work. The time which may profitably be spent in ordinary arithmetic does not exceed fifteen minutes per day in the primary, twenty minutes per day in the intermediate, and thirty minutes per day in the upper grades.

Burnham [1] suggests, — "If in 16 per cent of the school time pupils learn as much arithmetic as in 20 per cent of the time, hygiene suggests that the superfluous time de-

[1] Arithmetic and School Hygiene. Burnham, W. H. Ped. Sem. Vol. 18, 1911, pp. 54–73.

voted to the subject had better be spent in play out of doors. It is not for hygiene to minimize the importance of arithmetic; but with so many subjects crowding the curriculum the problem whether too much time is spent on arithmetic although primarily a pedagogical question, becomes a hygienic one also."

Nervous Tension and Over-stress Should Be Avoided. If the best results are to follow, the teacher should do everything possible to prevent anxiety and worry, mental strain, and tension in the study of this subject; for it seems more than other subjects to be the cause of worry and nervousness in children. Burnham gives the following case among others: "A boy of ten is working a sum on the blackboard. He stumbles and blunders unaccountably. The teacher in her pedagogical zeal goads and nags him, and finally humiliates him by bringing into the class his younger sister from a lower grade to perform the example for him. Within ten days the same boy is ill with endocarditis, a disease to which chorea too often seems to be prodromal."

This is, of course, an exceptional case, and many teachers know from experience that such results do not always follow this kind of treatment. But the teacher should also know that some children undergo undue nervous strain because mathematical association is so difficult for them. These individuals should be closely watched and shielded rather than scolded at critical times. The child's nervous balance is worth many times as much to him as is the arithmetic. And it must also be kept in

mind that when the former is in any way threatened the latter is bound to suffer in the long run. If the child appears delicate, undernourished, nervous, or especially backward in this subject, the teacher should be especially careful not to add to the difficulties by his method of teaching.

Time to Begin Arithmetic. By making it a part of their lives and by teaching it for no more than fifteen minutes per day, arithmetic may be made quite profitable to children in the first grade. It does not have the drawbacks of reading, which requires continuous use of the fine eye-muscles. Some of the time that has been devoted to reading might with profit be given over to arithmetic. Games which involve elementary arithmetic, memory work, and concrete arithmetic involved in money, measuring, and counting may be taken up without difficulty in the primary grades. Before he finishes the third grade the normal child may be taught all the multiplication tables, addition, subtraction, and most of division. If no more than fifteen minutes a day is devoted to the subject in the lower grades, if the teacher is constantly on the lookout for overstrain, and if individuals who are backward are not discouraged but encouraged, more arithmetic than is ordinarily completed in the fourth grade may be finished by the end of the third. The objections raised by Burnham, Kilpatrick, and others to arithmetic below the age of eight or ten years are limited to the three factors: (1) too much time given in the lower grades, (2) the undue strain resulting from un-

sympathetic and oppressive methods, and (3) too early introduction of abstract association.

The Hygiene of Motor Subjects

Drawing and other forms of art work, writing, woodwork, and sewing as a group of motor subjects furnish many problems in instruction as related to health. The hygienic element in teaching these subjects is very important. "For lack of it at the present time," says Burnham,[1] "many errors prevail, and there is often failure to give suitable opportunity for the development of this form of artistic speech." From the standpoint of hygiene the following features are important.

Vision. The teacher should keep in mind that the younger the child the less developed are his eyes, and that in the lower grades very little work should be done which will require minute inspection. Basketry, weaving, drawing, needlework, and writing must be carefully watched from this standpoint. Many children are incapable of good motor work because of poor vision. The teacher should strive to discover whether the child's vision is normal and whether or not he is color blind. This defect is usually found in from two to four per cent of boys but hardly ever in girls. Teachers who think that the introduction of more modern motor subjects will insure a more hygienic program often violate the laws of visual hygiene by using too fine materials.

[1] The Hygiene of Drawing. Ped. Sem. Vol. 14, 1917, pp. 289–304.

Position. When a child is required to work at a motor subject for a regular daily period, the position he assumes is of great importance, not only to the efficiency of the work, but also to his general physical well-being. In woodwork the bench should be of such height as to allow work which may be done without constant bending at the waist. In the vocational schools of many European countries the development of a health-stimulating posture is made a vital part of instruction.[1]

In drawing, painting, and writing, the following principles of position should be kept in mind by the teacher and adhered to by the children. The teacher should not make position a cause of nervous tension by being too rigid in the enforcing of rules.

Every child should understand that his posture will affect his circulation, breathing, growth, endurance, and finally, his efficiency. Good postures are the most restful and are never rigid.

1. The upper part of the body should rest at an easy erect position.

2. The surface of the paper should be in a place which will not require undue strain either in stretching or cramping the muscles.

3. The left hand and arm should be used to hold the paper and in no way subjected to strain or cramping.

4. The shoulders should by all means be kept in an easy, restful position and at equal height.

[1] See Burgerstein and Netolitzski, Das Handbuch der Schulhygiene.

Length of Periods. In woodwork and laboratory cooking long periods are not unwholesome. If an informal attitude is taken by the teacher, these subjects are likely to be restful. In writing, continuous practice for improvement should not last over five minutes in the lower grades, ten minutes in the intermediate grades, and fifteen minutes in the upper grades.[1] Sewing, especially of a fine nature, is very hard on the eyes. The teacher must arrange so as not to have long periods of close work.

Materials. Materials which are unwholesome or which interfere with good work are not only inefficient but harmful. Drawing crayons often contain arsenic. Children should be protected against the least possibility of anything of this nature. When the materials are inadequate or interfere with the child's performance, nervous tension is very likely to ensue. A scratchy pen, a penholder not suited to the child, and paper surface that interferes with writing are likely to cause unnecessary worry. Good materials, but not necessarily intricate or expensive apparatus, should always be provided.

Reading

Importance of Health Methods in Reading. Since school authorities place more stress upon reading than upon any other subject, and since it is involved in the acquisition of knowledge in every other subject, it is very important that proper hygienic methods and mate-

[1] Large list of Experiments given by Thompson.

rials be used in teaching it and that hygienic habits be formed by those who read. Reading also involves the constant use of the eyes. These sense-organs, which are basic to all life occupations and activities, are often injured by the work imposed upon the child in school. That children should be thus handicapped and injured in the name of education seems almost beyond belief in this enlightened day and age; but it is nevertheless true that they are. Publishers and book agents continually claim that they do not go to the expense of making hygienic books because *teachers and school authorities do not demand or buy them.* When a publisher does produce a proper book, he finds that a *cheaper* book is available and that there is no sale for his. The time is coming, although slowly, when there will be a hygienic minimum for every book published, and stringent laws will be made concerning books that are to be read by children especially. In the meantime the *least* we should do is to stress hygienic methods of using the books that are on hand.

When Should Reading Begin? The important factor in beginning the proper teaching of reading is not to wait too long. When taught rightly, reading may well begin in the kindergarten. Many hygienists have made the mistake of confusing all reading with the improper methods, long periods, and oppressive practices of the traditional school. Burnham wisely suggests that formal instruction be deferred. But the modern school is entirely doing away with the old formal methods. The work is being related to the child's natural life and in-

terests all through the grades. In the Horace Mann kindergarten instruction in reading is quite profitable, and, since injurious methods are not used, no bad effects follow.[1]

Length of Periods. All reading periods should be short. In the lower grades it is better to have two ten- or fifteen-minute periods than one of twenty or thirty minutes. In the intermediate grades not over twenty minutes should be continuously devoted to reading.

Protective Methods. (1) In the first and second grades *children should not be required to keep the place* while a pupil reads. The constant attention to the page does not allow the fine eye muscles opportunity to relax. The educational value of "keeping the place" is too small to compensate for injury that might result. The child is not likely to learn much about reading by following another's recitation. There is greater incentive to the reader in expressing his paragraph or page to a group which is interested in his performance than to one which has its eyes glued to books. If the child attends to his book only when he is to read, there is little opportunity for overstrain.

By long observation it has been found that finding the place when called upon is of even greater educational value than keeping it. The child must keep in mind what is being read and must use his reading ability to glance rapidly over the page and find the place where the last reader stopped. Any

[1] Described and reference given in the chapter on Motives.

teacher who will try conscientiously for three weeks the method of allowing the child to read to the class while it keeps its books closed, and of giving each new reader the page but allowing him to find the place for himself, is likely to be an advocate of the system. Tried for a day or two with inexperienced children, or with those who have been trained merely to follow the reader, success should not be expected. Everything that is worth while must be worked for. With proper exercise children soon develop great ability to find the page when the teacher has given the number. They scan it rapidly and are ready to read almost as quickly as when they have been required to keep their eyes upon the lines.

A very advantageous and hygienic exercise in reading is to read a sentence or a paragraph, name the page, and see how quickly all the children can find the place.

It is very important that the delicate and immature eye muscles of small children be protected from strain or continuous contraction. Reading by small children should be continually alternated by looking away from the book.

(2) Another method which is valuable from the learning standpoint and likewise hygienic is to ask children to read a paragraph and then, looking away from their books, tell the vital parts of it.

Illustration:

Teacher: "Who can tell us what the elephant said to the camel? When you are ready, stop reading and look at me. After I have seen that you are ready, you may

find out how the camel answered him, if you want to, while some of the others are trying to catch up."

Question follows question throughout the recitation. The children read silently and after each question they look away from their books to recite.

A more advanced class may read and report under some such direction as the following:

"Will you all read the next paragraph and be ready as quickly as possible to tell us the important additions to our story that you find there?"

It will readily be seen that both of the methods suggested are in line with the modern attitude towards reading and are effective in helping the children to gain power in silent scanning.

Position in Reading. We cannot be too careful that children have good light, falling upon the book and not shining into their eyes. Teachers often do not like to go to the trouble of constantly adjusting shades or of moving the children about. Time spent in this way is well spent and is bound to be a large factor in producing better results.

The children should sit in a free position with bodies erect. There is no special advantage in holding the book rigidly in the left hand. This is a custom which probably grew up from some accidental beginning and is now almost a fetish with some teachers. It is probably better to hold the book in both hands. The teacher should allow the child to use the most natural and restful method.

Materials for Reading. Teachers should band themselves together to fight for hygienic books. We shall

attention from this standpoint. The backward or deficient child needs attention of a different nature.

Backward Children

The Slow Child Needs Encouragement. Special care should be exercised with backward children in order that they may not become nervous under the strain of knowing that they are not coming up to expectations. The teacher's motto should be "encourage." Every means should be exhausted to discover and eliminate the *causes* of backwardness. If the child has poor health, the parents should be informed, and ways of improving his health should be suggested. If it is evident that he is naturally slow, every opportunity to make him happy with his lot should be taken advantage of. His special capacities should be brought to the front. If he has any powers, he should be told of them. Too often the school is a means of causing backward children to become more backward. Due to constant scolding and failure in school many persons who are fairly capable lose confidence in themselves. Others become soured on the world and society when they might have become happy efficient citizens under proper stimulation and encouragement in school.

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Arrested Development

Peculiar Arrests Very Frequent. One of the most important problems of mental hygiene in the school is to teach in a way which will prevent arrests and destructive by-products. The dangers of arrests have long been recognized by leaders in education. Many years ago Dr. W. T. Harris spoke of them as follows: "A severe drill in mechanical habits of memorizing or calculating, any overcultivation of sense perception in tender years, may so arrest the development of the soul in a mechanical method of thinking as to prevent further growth into spiritual insight."[1]

Although such cases have been noted and commented upon now and then, they have not been brought to the foreground as they should have been in books on method. One of the best studies of arrests is that made by Dr. Norman Triplett. He discovered that many individuals in college classes were sufferers from poorly directed or overzealous pedagogy applied to them in childhood. He collected these cases and reported them.[2] "About 700 of these cases have been collected," he writes. "It is not

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difficult to find them; indeed the majority of most classes find that they have some phase of the so-called arrests."

They occur in most of the "common branches." They should be expected here, for the traditional school is likely to overstress this side of education and to teach such subjects as geography, history, reading, writing, and arithmetic regardless of all pedagogical principles. Some of the arrests described by Dr. Triplett are:

Geography. Overemphasis of places on maps and of map-drawing has resulted in the development of a map imagery, which cannot be overcome. When the individual wants to think of some place on the earth, a map comes up instead. These cases are always found among persons who are visualizers Peculiar methods and practices have been continuously used until a special image is welded into the child's consciousness, and he is never able entirely to eradicate it. Some statements that illustrate this are:

"We drew the coast line so often, especially the New England coast, that each indentation as it appeared on the map stands out as vividly as it did then; the result is that I never think of those bays as bodies of water but as small blue spots on the map."

"At eight years of age I entered a class in M's geography, a textbook with supplementary atlas. Several years were spent upon map questions; today the mention of even a familiar place suggests a map rather than a picture of the place."

Methods of Preventing. Such cases, and they are quite frequent and of many varieties, reveal that teachers must teach more concretely, use more thinking and

less drill and memorizing, and sound children constantly as to the concepts they are acquiring. Overdrill and extreme requirements in the memorizing of symbols must be avoided.

Arithmetic. Constant pressure with scoldings and threats often develops an unfortunate mental attitude towards this subject which is carried through life. A child, who, properly taught, may have mastered the essentials of arithmetic, may lose this ability entirely. It must be kept in mind that in every class there are likely to be one or two children who are by nature lacking in this type of intelligence. It is best to let them work slowly and acquire the subject by growth rather than bring about overstrain. "Counting" is a type of hysteria. A nervous individual who has been strenuously trained in mathematics may acquire a mania for counting. "Counters" are not always caused by overpressure or overdrill in arithmetic, but it can readily be seen that severe pressure in this subject would aggravate hysterical natures. Weird number forms are also often a result of bad methods of teaching.

Special Causes of Arrests. That peculiar attitudes towards any subject may be developed in children by improper teaching methods cannot be doubted. The teacher should, as far as possible, avoid doing anything which is likely to fix the child's attitude against a subject, or develop a method of thinking which will keep him "in a rut," or militate against his progress. Some special causes of arrests are:

1. Too much stress placed upon a subject too early in life.
2. Threats or overstrenuous demands by teachers.
3. Failing a child for deficiency in a single subject.
4. Overdrill and not enough application.
5. Constant association with symbols and not enough concrete work.

Home Study

Over thirty years ago the Boston board of education passed a resolution as follows: "Home lessons in arithmetic should be given out only in exceptional cases." President Walker of the board said, "Over and over again have I had to send my own children, in spite of their tears and remonstrances, to bed, long after the assigned tasks had ceased to have any educational value and had become the means of nervous exhaustion and agitation, highly prejudicial to body and to mind; and I have no reason to doubt that such has been the experience of a large proportion of the parents whose children are habitually assigned home lessons in arithmetic." [1]

An important factor of home study is the character of the home. For example, Schmidt, quoted by Burnham, found in one city 25,679 dwellings in cellars; 3385 dwellings on the fifth story; 343 still higher; 560 ground stories with 175 to 200 tenants each; 154 with 226 to 250 in-

[1] Burnham, W. H. The Hygiene of Home Study. Ped. Sem. Vol. 12, 1905, pp. 213–230. Dr. Burnham is quoted largely in this section because he is the only American who has gone far into the field of the hygiene of instruction.

habitants each ; and 6 with a still larger number of people. Further it was reported that there were 1749 common kitchens, and the climax of misery was found in 4086 dwellings which consisted only of a kitchen. In dwellings with only one heated room the number of inhabitants was 14,100.[1]

Then the work a child must do outside of school, the fact that he will probably be helped more through recreation than study, and the slovenly habits formed by dawdling over irksome tasks, all point in the direction of fewer home assignments. To quote Burnham further: "The trend of opinion now is rather strongly against the giving of home tasks. The opinion of hygienists is that it leads to overpressure, at least in many individual cases. The opinion of many school men also is that it leads to deception and slovenly work, and that only a minimum amount is necessary.

"In the case of the poor, where home conditions make hygienic study impossible, or where so much work must be done by the pupils that there is no time for study, the allotment of home tasks should be altogether condemned. In the case of the well-to-do, where the parents wish to share in the education of their children and where outside tasks like instruction in music, domestic duties, or the like may be quite as important as the school work, the allotment of home tasks is likewise undesirable. The safe rule would seem to be that no home work should

[1] Berlin in 1904. Burnham notes that many of our own cities are not far in advance of this.

be prescribed; but where this seems desirable, suggestion for spontaneous work on the part of the pupil may well be given."

The best time to study is during the day at school. There should be provided, from the fifth grade up, ample study periods. At this time the children should be taught hygienic and effective study methods.

Child Health and Arithmetic

Length of Periods. In the study of this subject growing children must be confined within school buildings and must sit in school seats. It is apparent, then, that there is a limit to the amount of time which may be profitably spent in this way. Too much time, especially in continuous periods, not only militates against vitality but also results in less rapid and less thorough learning. Kirby, Thorndike, Burnham, Stone, Rice, and Brown report that less time spent more efficiently will result in better learning in this subject. This is true especially in drill work. The time which may profitably be spent in ordinary arithmetic does not exceed fifteen minutes per day in the primary, twenty minutes per day in the intermediate, and thirty minutes per day in the upper grades.

Burnham [1] suggests, — "If in 16 per cent of the school time pupils learn as much arithmetic as in 20 per cent of the time, hygiene suggests that the superfluous time de-

[1] Arithmetic and School Hygiene. Burnham, W. H. Ped. Sem. Vol. 18, 1911, pp. 54–73.

voted to the subject had better be spent in play out of doors. It is not for hygiene to minimize the importance of arithmetic; but with so many subjects crowding the curriculum the problem whether too much time is spent on arithmetic although primarily a pedagogical question, becomes a hygienic one also."

Nervous Tension and Over-stress Should Be Avoided. If the best results are to follow, the teacher should do everything possible to prevent anxiety and worry, mental strain, and tension in the study of this subject; for it seems more than other subjects to be the cause of worry and nervousness in children. Burnham gives the following case among others: "A boy of ten is working a sum on the blackboard. He stumbles and blunders unaccountably. The teacher in her pedagogical zeal goads and nags him, and finally humiliates him by bringing into the class his younger sister from a lower grade to perform the example for him. Within ten days the same boy is ill with endocarditis, a disease to which chorea too often seems to be prodromal."

This is, of course, an exceptional case, and many teachers know from experience that such results do not always follow this kind of treatment. But the teacher should also know that some children undergo undue nervous strain because mathematical association is so difficult for them. These individuals should be closely watched and shielded rather than scolded at critical times. The child's nervous balance is worth many times as much to him as is the arithmetic. And it must also be kept in

mind that when the former is in any way threatened the latter is bound to suffer in the long run. If the child appears delicate, undernourished, nervous, or especially backward in this subject, the teacher should be especially careful not to add to the difficulties by his method of teaching.

Time to Begin Arithmetic. By making it a part of their lives and by teaching it for no more than fifteen minutes per day, arithmetic may be made quite profitable to children in the first grade. It does not have the drawbacks of reading, which requires continuous use of the fine eye-muscles. Some of the time that has been devoted to reading might with profit be given over to arithmetic. Games which involve elementary arithmetic, memory work, and concrete arithmetic involved in money, measuring, and counting may be taken up without difficulty in the primary grades. Before he finishes the third grade the normal child may be taught all the multiplication tables, addition, subtraction, and most of division. If no more than fifteen minutes a day is devoted to the subject in the lower grades, if the teacher is constantly on the lookout for overstrain, and if individuals who are backward are not discouraged but encouraged, more arithmetic than is ordinarily completed in the fourth grade may be finished by the end of the third. The objections raised by Burnham, Kilpatrick, and others to arithmetic below the age of eight or ten years are limited to the three factors: (1) too much time given in the lower grades, (2) the undue strain resulting from un-

sympathetic and oppressive methods, and (3) too early introduction of abstract association.

The Hygiene of Motor Subjects

Drawing and other forms of art work, writing, woodwork, and sewing as a group of motor subjects furnish many problems in instruction as related to health. The hygienic element in teaching these subjects is very important. "For lack of it at the present time," says Burnham,[1] "many errors prevail, and there is often failure to give suitable opportunity for the development of this form of artistic speech." From the standpoint of hygiene the following features are important.

Vision. The teacher should keep in mind that the younger the child the less developed are his eyes, and that in the lower grades very little work should be done which will require minute inspection. Basketry, weaving, drawing, needlework, and writing must be carefully watched from this standpoint. Many children are incapable of good motor work because of poor vision. The teacher should strive to discover whether the child's vision is normal and whether or not he is color blind. This defect is usually found in from two to four per cent of boys but hardly ever in girls. Teachers who think that the introduction of more modern motor subjects will insure a more hygienic program often violate the laws of visual hygiene by using too fine materials.

[1] The Hygiene of Drawing. Ped. Sem. Vol. 14, 1917, pp. 289–304.

Position. When a child is required to work at a motor subject for a regular daily period, the position he assumes is of great importance, not only to the efficiency of the work, but also to his general physical well-being. In woodwork the bench should be of such height as to allow work which may be done without constant bending at the waist. In the vocational schools of many European countries the development of a health-stimulating posture is made a vital part of instruction.[1]

In drawing, painting, and writing, the following principles of position should be kept in mind by the teacher and adhered to by the children. The teacher should not make position a cause of nervous tension by being too rigid in the enforcing of rules.

Every child should understand that his posture will affect his circulation, breathing, growth, endurance, and finally, his efficiency. Good postures are the most restful and are never rigid.

1. The upper part of the body should rest at an easy erect position.

2. The surface of the paper should be in a place which will not require undue strain either in stretching or cramping the muscles.

3. The left hand and arm should be used to hold the paper and in no way subjected to strain or cramping.

4. The shoulders should by all means be kept in an easy, restful position and at equal height.

[1] See Burgerstein and Netolitzski, Das Handbuch der Schulhygiene.

Length of Periods. In woodwork and laboratory cooking long periods are not unwholesome. If an informal attitude is taken by the teacher, these subjects are likely to be restful. In writing, continuous practice for improvement should not last over five minutes in the lower grades, ten minutes in the intermediate grades, and fifteen minutes in the upper grades.[1] Sewing, especially of a fine nature, is very hard on the eyes. The teacher must arrange so as not to have long periods of close work.

Materials. Materials which are unwholesome or which interfere with good work are not only inefficient but harmful. Drawing crayons often contain arsenic. Children should be protected against the least possibility of anything of this nature. When the materials are inadequate or interfere with the child's performance, nervous tension is very likely to ensue. A scratchy pen, a penholder not suited to the child, and paper surface that interferes with writing are likely to cause unnecessary worry. Good materials, but not necessarily intricate or expensive apparatus, should always be provided.

Reading

Importance of Health Methods in Reading. Since school authorities place more stress upon reading than upon any other subject, and since it is involved in the acquisition of knowledge in every other subject, it is very important that proper hygienic methods and mate-

[1] Large list of Experiments given by Thompson.

rials be used in teaching it and that hygienic habits be formed by those who read. Reading also involves the constant use of the eyes. These sense-organs, which are basic to all life occupations and activities, are often injured by the work imposed upon the child in school. That children should be thus handicapped and injured in the name of education seems almost beyond belief in this enlightened day and age; but it is nevertheless true that they are. Publishers and book agents continually claim that they do not go to the expense of making hygienic books because *teachers and school authorities do not demand or buy them.* When a publisher does produce a proper book, he finds that a *cheaper* book is available and that there is no sale for his. The time is coming, although slowly, when there will be a hygienic minimum for every book published, and stringent laws will be made concerning books that are to be read by children especially. In the meantime the *least* we should do is to stress hygienic methods of using the books that are on hand.

When Should Reading Begin? The important factor in beginning the proper teaching of reading is not to wait too long. When taught rightly, reading may well begin in the kindergarten. Many hygienists have made the mistake of confusing all reading with the improper methods, long periods, and oppressive practices of the traditional school. Burnham wisely suggests that formal instruction be deferred. But the modern school is entirely doing away with the old formal methods. The work is being related to the child's natural life and in-

terests all through the grades. In the Horace Mann kindergarten instruction in reading is quite profitable, and, since injurious methods are not used, no bad effects follow.[1]

Length of Periods. All reading periods should be short. In the lower grades it is better to have two ten- or fifteen-minute periods than one of twenty or thirty minutes. In the intermediate grades not over twenty minutes should be continuously devoted to reading.

Protective Methods. (1) In the first and second grades *children should not be required to keep the place* while a pupil reads. The constant attention to the page does not allow the fine eye muscles opportunity to relax. The educational value of "keeping the place" is too small to compensate for injury that might result. The child is not likely to learn much about reading by following another's recitation. There is greater incentive to the reader in expressing his paragraph or page to a group which is interested in his performance than to one which has its eyes glued to books. If the child attends to his book only when he is to read, there is little opportunity for overstrain.

By long observation it has been found that finding the place when called upon is of even greater educational value than keeping it. The child must keep in mind what is being read and must use his reading ability to glance rapidly over the page and find the place where the last reader stopped. Any

[1] Described and reference given in the chapter on Motives.

teacher who will try conscientiously for three weeks the method of allowing the child to read to the class while it keeps its books closed, and of giving each new reader the page but allowing him to find the place for himself, is likely to be an advocate of the system. Tried for a day or two with inexperienced children, or with those who have been trained merely to follow the reader, success should not be expected. Everything that is worth while must be worked for. With proper exercise children soon develop great ability to find the page when the teacher has given the number. They scan it rapidly and are ready to read almost as quickly as when they have been required to keep their eyes upon the lines.

A very advantageous and hygienic exercise in reading is to read a sentence or a paragraph, name the page, and see how quickly all the children can find the place.

It is very important that the delicate and immature eye muscles of small children be protected from strain or continuous contraction. Reading by small children should be continually alternated by looking away from the book.

(2) Another method which is valuable from the learning standpoint and likewise hygienic is to ask children to read a paragraph and then, looking away from their books, tell the vital parts of it.

Illustration:

Teacher: "Who can tell us what the elephant said to the camel? When you are ready, stop reading and look at me. After I have seen that you are ready, you may

find out how the camel answered him, if you want to, while some of the others are trying to catch up."

Question follows question throughout the recitation. The children read silently and after each question they look away from their books to recite.

A more advanced class may read and report under some such direction as the following:

"Will you all read the next paragraph and be ready as quickly as possible to tell us the important additions to our story that you find there?"

It will readily be seen that both of the methods suggested are in line with the modern attitude towards reading and are effective in helping the children to gain power in silent scanning.

Position in Reading. We cannot be too careful that children have good light, falling upon the book and not shining into their eyes. Teachers often do not like to go to the trouble of constantly adjusting shades or of moving the children about. Time spent in this way is well spent and is bound to be a large factor in producing better results.

The children should sit in a free position with bodies erect. There is no special advantage in holding the book rigidly in the left hand. This is a custom which probably grew up from some accidental beginning and is now almost a fetish with some teachers. It is probably better to hold the book in both hands. The teacher should allow the child to use the most natural and restful method.

Materials for Reading. Teachers should band themselves together to fight for hygienic books. We shall

never get them unless we assert that hygiene is a minimum essential, and that interesting and educative contents is worth while only if this minimum is complied with. *It costs more to put out a hygienic book* than to put out one where the laws of hygiene do not have to be followed.

The print should be of correct height, weight, and spacing. The correct size is given here.[1]

GRADE 1

"The children cannot see it now."

GRADES 2 AND 3

"She must climb the tree. She held on, first to one branch and then to an-

GRADE 4

"On the way down, an Indian who was in a canoe stole something from the ship. One of

In order to make attractive pictures, which are more in demand than hygienic materials, publishers are often forced to use paper with a very high finish. Whenever possible the teacher should give preference to the text printed on paper that does not reflect the light.

The books and materials used in reading should be watched closely so as not to become sources of contagion.

[1] According to Terman in The Hygiene of the School Child.

Children should not wet their fingers in their mouths and then use them to turn pages. Whenever a book comes in contact with a child who has a contagious disease, it should be burned rather than fumigated. Fumigation is a very doubtful method of removing contagion from books. It is rarely possible to do it effectively.

Summary

It might be said by way of summary that hygienic methods are natural methods. Anything that runs counter to the child's natural growth or spontaneity is not likely to be either efficient or hygienic; further, in dealing with extra bright or with backward children special care should be taken to prevent nervousness and arrests. And, lastly, in teaching every school subject larger and more permanent results will follow if care is taken to use methods which foster health.

CHAPTER XIII

LESS SEDENTARY PRACTICES AND METHODS

Less Sedentary Programs

The Hygiene of the Program. Textbooks on school hygiene used to insist upon a definite program of subjects based upon the supposed curve of work. Arithmetic or some "difficult" subject was placed first in the day because the child was supposed to be more capable at that time than later. Experiments have proved that the curve of energy or ability to work depends upon so many factors that it is impossible to fix with surety a program based upon it.

However, all our evidence points to the necessity of a balanced program. Subjects which allow or employ physical activity and those, like music, which secure relaxation should be alternated with subjects which use specific mental powers or those which are confining. Monotony retards learning, especially with small children. The constant use of a single brain function, as in any work requiring mechanical memory, or the use of small muscles, as the eye muscles in reading or the finger and forearm muscles in writing, should be avoided. Both the efficiency of children's learning and their health are benefited in this way. But the most common reason for

a varied program is to balance seat work, which is confining to both body and spirit, with work which allows for physical relaxation and activity.

Relaxation Periods. In addition to the arrangement of subjects to avoid monotony, overstrain of functions or small muscles, and too long sitting, special periods for relaxation and light exercise should be provided. These are usually placed at the end of every fifteen or twenty minutes in the lower grades and at the end of every thirty or forty minutes in the upper grades. The relaxation period should last from five to eight minutes. A good game followed by stretching exercises will make the relaxation period both interesting and profitable. In the lower grades of many schools rhythmic exercises and folk dances are used in these relaxation periods.

Illustrative Programs. The two programs which follow were used for a year in the grades indicated. Results proved that time was not wasted by the relaxation and exercise periods. Both grades covered more work than was required in the state course of study. In some subjects they finished over three times the amount suggested in the state course.

FIRST GRADE

9:00 to 9:10 Opening Exercises
9:10 to 9:20 Phonics
9:20 to 9:25 Rhythm and Folk Dances
9:25 to 9:40 Reading
9:40 to 9:50 Spelling
9:50 to 10:30 Play

EIGHT HUNDRED PUPILS FROM THE B. F. DAY SCHOOL, SEATTLE, WASHINGTON. THE ADMINISTRATION OF THE SEATTLE SCHOOLS REQUIRES RELAXATION PERIODS ALTERNATING WITH SUBJECTS THROUGHOUT THE DAY. ONCE EACH DAY, SETTING-UP EXERCISES ARE TAKEN OUT-OF-DOORS. EVERY LARGE BUILDING IS EMPTIED BETWEEN NINE O'CLOCK AND RECESS, A PRACTICE WELL WORTH IMITATING

10 : 30 to 10 : 45 Arithmetic or Numbers
10 : 45 to 10 : 55 Rhythm and Folk Dances
10 : 55 to 11 : 15 Reading
11 : 15 to 11 : 20 Relaxation
11 : 20 to 11 : 40 Nature Study
11 : 40 to 12 : 00 Language and Writing

12 : 00 to 1 : 30 Noon Intermission

1 : 30 to 1 : 45 Art
1 : 45 to 2 : 05 Music and Rhythm
2 : 05 to 2 : 20 History

EIGHTH GRADE (Junior High)

9 : 00 to 9 : 30 Arithmetic
9 : 30 to 9 : 50 Study

9 : 50 to 10 : 30 Play (dancing for girls and drill for boys three days)

10 : 30 to 11 : 00 English
11 : 00 to 11 : 20 Music
11 : 20 to 11 : 25 A short game followed by stretching exercises
11 : 25 to 12 : 00 Study

12 : 00 to 1 : 30 Noon
1 : 30 to 2 : 00 History or Civics

2 : 00 to 3 : 00 Manual training, metal work, or physics for boys, sewing and cooking for girls.

3 : 00 to 4 : 00 Commercial branches, art, printing, or study

Long Play and Physical Training Periods. It will be noted that a forty-minute period each morning is given to play and physical exercise in both the first and the

eighth grades. Schools are rapidly moving in this direction. Play is by far the most important subject in the curriculum. Teachers should guard its time even more jealously than they have insisted upon full time for arithmetic and grammar in the past. The forty minutes a day spent in vigorous activity and in learning the hundreds of lessons which boys and girls must learn to get along together must not be regarded as time given to relaxation. Vital and necessary lessons are being learned every minute children are together in these more or less free periods. Consider, for example, the following illustration, the experience of a city superintendent when he was a boy in the sixth grade. Hundreds of like experiences are to be found on every playground in the country.

A Lesson Learned in Play.

When I was a boy, during the hockey season it was the custom to search for sticks with which to play this game. When I was about eleven years old, I had a singular experience with such a stick. I found it on a fallen peach tree one afternoon, and as soon as I had trimmed it, I knew that I had found the perfect hockey stick, the prize in which all boys delight even more than in playing the game itself.

Early the next morning I hurried to school in order to exhibit my find. The first boy to arrive was considerably older than I, and I prized his judgment very much. I showed him my stick. To my surprise and chagrin he did not react to it in the way I expected. He lifted it, shook his head, and informed me that it was too heavy and commented that peach was not a very good wood anyway.

Seeing that his words and attitude had had the intended effect upon me, he adroitly changed the subject. Then after all my interest and ambitions in the fine stick had reached a low ebb, he turned to it and offered to "take it off my hands" for ten cents. He, being much larger than I, might be able to use it a little. I was willing and the bargain was made.

As soon as the other boys began to arrive, the boy who had purchased my club became the center of attraction. The stick was, without doubt, all that I had believed, and he had imposed upon my inability to trust my own judgment. During the entire season the stick which I had found and had parted with so foolishly was the idol of every boy in the school.

This experience taught me a lesson that has been worth much more to me than most of the learning I acquired in the classroom. It and many others like it have made me socially able to take care of myself in all classes of company. I regard this ability as essential and fundamental.

It is not the intention here to discuss the many and varied educational values of play. The teacher should understand that the modern school is considering very seriously its obligation in this respect. Teachers often worry about time spent in such a way. The fact that much of the old-style arithmetic and practically all of the old type of grammar is a waste of time does not seem to bother teachers nearly so much as the possibility of time being wasted in play. We must all take the stand that play is the most vital element in our school program, and we must live up to our ideas in this matter by insisting that the child play as well as study and recite. Many educators who have children of their own testify that they feel quite doubtful whether they would be benefited by

the work of the school if it were not for the social and physical development which comes from free association during the mornings, noons, and recesses.

Recesses and Relaxation Periods Promote Efficiency. There have been many experiments both in American and European schools which illustrate the value of recesses to regular subjects in the program. The increased supply of oxygen that comes from healthy activity in the open air together with the better flow of blood and lymph seem to give the child energy for higher achievement. Experiments by European investigators have led most countries there to adopt a program in which a recess of from ten to fifteen minutes follows each school period. As far back as 1881 a French law provided for the hour being divided into a forty-five-minute recitation period followed by a fifteen-minute recess. In 1883 the same program was tried in Hessia. In Bavaria in 1891 a like plan was adopted. In 1905 the Austrian school deputation adopted a plan with a ten-minute recess after each school period except the second, which was followed by a fifteen-minute recess. In Saxony in 1908 a plan somewhat like this was adopted, and in 1911 all the schools of Prussia were placed under a like regulation. In the Danish Folk High Schools a period of one hour each morning is given to physical exercise. The tremendous influence that these schools are having upon the social and intellectual development of rural Denmark would indicate that such a scheme does not interfere in any way with intellectual growth.

Beginning over a quarter of a century ago with Kraepelin, hundreds of experiments have been made to formulate, if possible, tabulated evidence of the value of relaxation and exercise periods. Thorndike has pointed out that many of these experiments were unscientific and that the experimenters were wrong in attempting to establish general fatigue as the cause of the fall in achievement by the pupils when rests were not provided. Whether they relieve monotony or fatigue is not important in the provision of recesses and relaxation periods. The fact that they are essential is evident. Experiments point to unquestionable value to the rest of the program of a suitable amount of time devoted to play and exercise. Friedrich, Laser, Griesbach, Janusche, and a large number of others in Germany; Burnham and Thorndike in America; Winch in England; Binet in France; Schuyten in Belgium; Mosso and Bellei in Italy; Axel Key in Sweden; Teljatnik in Russia; and Burgerstein in Austria are scientists who have made careful experiments proving the value of recesses to the work done during the regular periods.

Longer Noon Periods. In many schools a noon period of only one hour is allowed. In addition to this teachers often keep children at school for part of this noon intermission. When a child must go several blocks, eat his lunch, and return to school in this short time, a physical and mental strain is likely to result. Since education is solely for the children, and since health is the most fundamental feature of all education, the school cannot afford

to continue such a practice. In many places and especially in schools in the suburbs of large cities the teachers bring lunches and regard the noon intermission as extra time which they are forced to give the schools. The shorter they can make it the better it is for them. These same teachers dispense with the regular fifteen-minute recess whenever they have the slightest excuse, and " let out early " in the evening.[1]

In order to enjoy his noon meal leisurely and not have to hurry to school just after eating, the child should be permitted a full hour and a half at noon. Two hours would be better, and the time will probably come when school authorities, considering that the health of the children is paramount to personal desires of teachers, will provide for a full two-hour noon intermission for growing children.

School Furniture Which Stimulates Activity. The old-fashioned desks and seats which filled the entire room and confined the children in a doubled-up position all day are being superseded by movable chairs and movable tables. These are usually placed around the edge of the room and the center is left open for motor activities. In this open space the children play games, stand or sit on the floor, or gather about the teacher to hear a story or to take part in a recitation. These movable tables and chairs were first introduced in the kindergarten. At present many schools have adopted them for the first

[1] The teacher should never keep a child in at recess for punishment. This is injurious and slovenly discipline. Many cities forbid it.

grade, a few have them in the first, second, and third grades, and one or two schools have the tables and chairs through all eight grades. The new adjustable seat and desk are not as hygienic as tables and chairs, for the point to be emphasized here is that no seat can be constructed which will be satisfactory for a growing child to sit in all day long. The opportunity for movement must be provided. The movable tables and chairs solve this problem. They would, of course, be as bad as any seat and desk if the children were required to sit in one place for long periods. It is the duty of the teacher to see that the children do not sit overlong. With proper movable furniture it is possible to make a program and to use methods which stimulate a sufficient activity on the part of the children. Hygienic chairs and tables can be purchased at less expense than seats and desks. All school supply houses have them for sale. Thus there is no reason why they should not soon become standard equipment.

Less Sedentary Methods

An Experiment with Feeble-minded Children. In the school for feeble-minded at Waverly, Massachusetts, the experiment of allowing the children to stand or sit at their tables while they worked was tried. It was soon evident that during the short periods in which they were required to work indoors the children preferred to stand. After a time none of the children would sit, and the classes were conducted standing. This is one of the many advantages which feeble-minded children have over

normal children. A child should sit only in order to rest. As school is maintained in many places to-day the children are made lazy by being forced to sit quietly for the greater part of the school day.

School Subjects May Be Taught by Active Methods. All the regular subjects taught in our schools at the present time may be so organized and treated as to be learned as well or better than they have ever been and at the same time be far less sedentary. The American teacher has a great advantage in having the use of a blackboard. With hygienic crayon and erasers half the children may be kept working at the board in all subjects which ordinarily confine them to their seats. Groups of children may gather about the teacher and discuss a lesson, standing as well as sitting. Reading and literature lessons may be organized into informal dramatizations and from five to ten children, according to the number of parts, may be allowed to stand and read while they act in movement, voice, and gesture the parts they play.

Illustrations in Arithmetic. Second grade: In learning the combinations to twenty, large dominoes, about four by eight inches, were used. The teacher made them from ordinary inch boards. The spots were about one half inch in diameter. The children gathered in a circle upon the floor and as each child played he received credit for all the spots on both ends of the column. The entire class was responsible to see that he received the proper credit. He wrote his credits in a vertical column on the board, and at the end of the game, he

added his column while the rest of the class gathered about him to see that he did it correctly.

Fourth grade: In the corner of the schoolroom a play store with a counter and shelves was located. The shelves were supplied with empty merchandise boxes, and toy money was provided for the children. Four clerks and four customers could work at a time, and the remainder of the children were delegated to be responsible for each clerk and his customer. After a few rapid transactions the clerks and customers were changed. Any teacher who tries such a scheme will not only be teaching in a less sedentary way but will soon see how little his regular arithmetic work is functioning when the children are asked to make ordinary simple transactions.

Eighth grade: The teacher made specific plans to use the blackboard for half of the class each day. The children at the board were assigned special problems which brought out their weaknesses so that the teacher could correct them. There is little advantage gained by merely sending groups to the board. A specific plan must be made to utilize the board work to advantage. Then the children will be benefited both by the less sedentary method and by the organization of the work.

In mensuration work many courses of study call for the measuring of the rooms, buildings, and grounds as part of the work. This not only makes mensuration more concrete but also furnishes arithmetic which does not demand constant sitting.

Informal Attitude in Teaching. Strain is avoided by letting the children feel that their unconscious and trivial movements are not regarded as important to school discipline. A child should feel that he may yawn, stretch his muscles, wiggle, or turn around now and then without in any way interfering with the work of the teacher or that of the school. He should not feel that he must sit rigidly in his seat while explanations are being made or that he must sit up straight in his seat with his hands locked together on his desk when he has finished a task and has nothing to do. Just as soon as possible children should be allowed to talk to each other when they find it necessary. They should understand, of course, that they must not interfere with each other's work. A child should not have to ask the teacher when he wants to borrow a pencil or a knife, or when he finds it necessary to leave the room. Discipline should mean a feeling of freedom on the part of the children and should be positive and not negative or confining. It usually takes some time to develop a class or a school to this stage of discipline, but there are many good schools where it has been achieved. Discipline and restraint become minor issues in such schools. These schools are more efficient, of course, than the old type of school, which makes discipline its largest problem. From the standpoint of achievement, discipline is merely friction and lost motion. It is more or less necessary but should be dispensed with whenever possible.

Instruction Out-of-doors

The Necessity for Out-of-door Life. Activity, both mental and physical, is at its best when not restrained within doors. Man has evolved in the great world outside. His constitution is not made to withstand continued confinement. This is especially true during the period of formation and growth. The growing child should spend every minute he can in the open air, and we need not fear for his education if we keep him there most of the time. Children naturally love the great world out-of-doors. This love is merely the functioning of their instincts of self-protection. The increased activity which children show when out-of-doors is a good reason for carrying on school as much as possible outside of the schoolhouse. Many of the magnificent brick school buildings built a few years ago stand to-day as monuments of the barbarism which parents and school authorities practiced upon growing children. Our modern knowledge of sanitation condemns them. The great white plague is nothing more than the result of overconfinement. It is worth the consideration of every teacher that the most prevalent disease of the teaching profession is tuberculosis, occasioned, no doubt, by living in schoolhouses.[1]

If the early training of children has so powerful an effect upon them all through life, should we not first of all cultivate this love of the out-of-doors which is natural to every child? Should we not strive to fix the outdoor

[1] Terman, L. M. The Teacher's Health. Houghton Mifflin.

habit and do everything in our power to cause the child to want to live in the open, to find his pleasures there, and to acquire learning and health at the same time? Should the school make such an aim the central feature of the curriculum, we should soon grow a race that would have little need for doctors and patent medicines.

Sick Children Often Learn Faster and Grow Healthy When Taken Out-of-doors. Hundreds of experiments with open air schools [1] have proved that sick and unhealthy children learn more rapidly and increase in vigor when allowed to work in the open air. A university professor says he is able to keep his eight-year-old boy in fair health only by insisting upon his playing out-of-doors all day Saturday and Sunday. The child comes home each Friday evening in a worn-out condition. On Mondays his vitality is greatly increased. During vacations his health improves greatly. This is a special case, it must be admitted, and the ordinary child probably goes along without the ill-effects of overconfinement coming to the surface. Searching examinations usually disclose them, however, and they are all the worse because hidden. Teachers can find no excuse for keeping children within doors from nine to twelve and from one to three except that tradition demands it.

The open air school is a long step in the right direction. It has been used mostly thus far for children who were admittedly too sick to undergo the confinement of the ordinary school. In every case wonderful improvement

[1] See Watt's Open Air.

has been noted. If open air is a good cure for so many forms of child ailment, then why is it not a good preventive for sickness? Why is it not also the best tonic that those who need to grow can have? There is no definite way of proving these points experimentally, but it seems established that healthy children should do more and better work out-of-doors than indoors.

Out-of-door Teaching Must Be Well Organized and Definite. Teachers are likely to find that children cannot be managed as easily outside of the schoolroom as they can inside of it. This is often due to the fact that a pupil often thinks his schoolroom attitude should be dropped as soon as he gets outside the door. He is reasonably willing to study geography, history, and like subjects so long as he has to stay in a schoolroom, although even inside it is not always easy for the teacher; but as soon as the schoolroom is left behind, the lessons studied there are to be left behind also. This speaks badly for school work, and some persons have described it as being fit to exist only when confined within "four brick walls." An outdoor class now and then is valuable in this connection if for no other reason; children should be made to understand that a school subject may be worth while out in the sunshine and is in no way confined to work with a textbook inside the school building. Class work out-of-doors is one of the first steps in making the school conform to the principle that education is life.

In planning an out-of-door lesson the teacher must first of all be sure that every child will have something

to occupy him for the entire period. Inside, when a child has nothing to do, he can be confined in his seat. Out in the open it is impossible to confine him. It is much harder to discipline a class out-of-doors than within the schoolroom. The inner impulses of the children, the many distracting influences of the great world about, and the tendency to act differently outside of school from inside will all have to be adequately met by the plans of the teacher. The following is an illustration of a plan of a sixth-grade teacher which succeeded:

I resolved to take my class out-of-doors where we could both be gaining in health and studying nature first hand every day that I could adequately conduct the work there. After my first attempt at going to find a bird nest which the boys knew about, I resolved that I would have ample material on hand to keep every child interested and busy during our entire trip and that every individual should understand just what his duties were before we left the room. I also talked with the children about our opportunities to go out-of-doors for work now and then and made them realize that if we were not alert and busy, persons passing would think that they were not receiving proper training. I planned good lessons in other subjects, such as arithmetic and English, and said that those who did not want to study the subject at hand and give attention every minute of the time we were out could remain inside and study the regular way. It was necessary to require children to remain inside only once or twice during the term, but I found that I must plan my subject and know it more specifically than when presenting it indoors.

Some illustrative lessons were:

Evergreens and conifers: I remembered that in botany I had studied some about evergreens and conifers. On my way to school I noticed that there were several varieties of these trees on some vacant lots right next to the school yard. I knew that these trees could be closely connected with the geography work, for there were several kinds of pine, they probably contained pitch, and they illustrated beautifully the struggle for existence, adaptations in leaves and branch forms, etc. I was surprised, however, at the amount of study it took for me to be able to take the children into this grove of trees and teach them first hand. I collected pictures, went to the lumber yards and obtained pamphlets and catalogues, studied boards, and read in botanies. The work paid, however, and I soon collected material to serve for four or five out-of-door lessons which resulted in a better acquaintance with the children and a great burst of interest on their part in all school work.

We studied the different kinds of conifers and learned to tell them apart. We studied and read of the products of these trees. We went to a lumber yard and studied the different kinds of boards. Our reading was much more effective as a result.

Sugar: As a culmination to a study of this industry we visited a sugar factory. A man in the community who was very well acquainted with all the processes of the manufacture of sugar was induced to go along and explain to the class.

Mushrooms: I noticed that there were many varieties of edible mushrooms growing close to the schoolhouse. I obtained books (there is a government bulletin on mushroom culture) and learned to detect the different kinds. I talked to the children about them, and one Friday afternoon we went to a place where I knew they grew and the children discovered and discussed the varieties. During the entire remainder

of the year the effect of this trip was evident. The interest in mushrooms never entirely died out. Now and then a child would ask me a question about them and tell me of some new variety or new bed.

One day I noticed an artist at work painting a scene. This gave me an idea: why could not children go out-of-doors to do art work now and then. In the spring I carried this plan into execution and found that the children responded beautifully. I later used the same method in English. I took the class out into the school yard and told them that they might describe something they saw. I had often done this with pictures inside the schoolroom and I soon learned that it can be done even better by going outside.

By managing my work in such a way as to make every child feel that he was doing even better school work when out-of-doors, and by planning definitely and carefully, I was able to avoid criticism by the community for my innovation. I received many comments of the complimentary type, for I saw to it that no one could assert that the class was not in perfect order and working diligently every minute that we were out. Many persons who would never have seen our work stopped to look and listen.

Illustrations of Outdoor Work in Regular School Subjects

Geography. In the study of soils, rivers, bays, capes, peninsulas, and islands, the teacher will find good illustrative materials in any small stream or rivulet. In large cities there may be none near enough to visit, but in the majority of schools very little difficulty will be experienced in discovering such a stream. This work is done out-of-doors in many schools to-day. The Iowa State Teachers College recently published a bulle-

North America on a Forty-foot Scale

tin on rural schools in that state with illustrative pictures showing country children studying geography first hand.

If the teacher wants to make the map work in the school more impressive, the best way to do this will be to increase the size of the maps. The bigger the representation, within limits of use and perspective, the better from the child viewpoint.

If the children will make a map of the United States covering their entire school yard, and if they locate the most important places with stakes or natural landmarks, they will have a more instructive representation than could possibly be made on a blackboard. Working with this big map, most of the geography of the United States can be taught out-of-doors. Rivers, mountains, and all natural features can be made. The coast lines can be put in with lime such as is used in marking off tennis courts and football fields. A sack of air-slaked lime and a tin can are all that are necessary for this. Lessons in history and geography can be taught on such a map, and the children can be taken out in the yard every day for this work.

Recently a map of the European war zone was developed by an eighth-grade class. From Berlin were located Paris, London, Petrograd, Warsaw, Lodz, Antwerp, the Kiel canal, all the important British cities, Vienna, Rome, and the cities of the Italian earthquake. The children learned to work away at their map and did not pay any attention to the disturbances which arose from people passing by.

The teacher of this class said that she learned more European geography from teaching in this manner than she did in any geography class in which she had ever studied. The children had excellent notions of relative distances and positions, for any one of them could imagine that he was standing at Berlin, could point to any other important European city, and could also give a fairly accurate estimate of the distances. If he was told to imagine himself at London, Paris, or Vienna, he could do as well. This result came from the actual experience he had in walking between these places in locating the various events of importance that were daily happening in the war, and also from the splendid picture of the entire continent that the large outdoor map furnished him.

Ten miles to the yard makes a good scale for such work, and all the children should be supplied with yardsticks. If the map is made on a smaller scale, and sometimes the school yard will demand this, twenty miles to the yard makes a good ratio. If the map goes beyond the school grounds, the teacher can usually get permission to drive stakes. It is better not to put one map upon another. The children constantly live with the map, and their imagery is confused if two maps are put in the same place. For comparison, of course, this may be done.

One main trouble comes from the work being destroyed by the children out of school hours. This may be overcome by locating places with stout stakes about six inches long. These are driven into the ground until they are just visible. It is not necessary to label them, for the

child should know what place the stake represents without looking at the name.

Physical geography cannot be taught very well from a textbook, and if the relief maps are made out-of-doors on a large scale, they will be much more impressive. Take, for example, North America. A sixth-grade class can construct in a few days a great map forty feet long showing all the natural features. Here the main natural lay of the land from Alaska to the Panama canal can be taken in one grand visual picture.

History. History work out-of-doors is quite profitable. When the large maps are made in geography the children may dramatize such historical scenes as are feasible. Braddock's Defeat made an excellent outdoor lesson for a seventh-grade class. When the boys are making their snow forts they can be stimulated to make them represent, on a fairly accurate scale, many places that are studied in history until they often go beyond all requirements in their study of historical situations to represent.

In the lower grades Indian life may be represented by constructing weapons, tools, clothing, and wigwams out-of-doors.

Nature Study. This subject should be a regular round of out-of-door trips. The only way to learn nature is to go to her.

Civics. Trips to water reservoirs where such features as drainage, pressure, and hygiene, which had to be considered by the authorities in establishing them, may be seen and discussed; trips to local industrial and

manufacturing establishments; trips to civic buildings, bring the child in contact with the real civic life of his community. They are being used in a great many places.

Out-of-door Recitations. When warm weather comes in the spring, many schools find it profitable to take classes outside for study periods and recitations. On a hot day a group of children gathered on the grass under a tree for an arithmetic drill, a reading lesson, or a story is much more in harmony with all that is best in education than the same group sweating over their tasks in a stuffy room.

A Socialized Recitation in the University Heights School, Seattle, Washington

CHAPTER XIV

THE INDIVIDUAL–SOCIAL BALANCE

The Inadequacy of the Old Formal Class Instruction. The traditional " class " and the old formal method of recitation do not suit the demands of either the individual or society. Reforms are necessary from both standpoints. The old style class was a failure for the following reasons :

1. The group was not organized so that social coöperation and stimulation could be brought into play. The class was an artificial organization, based primarily upon the time the different members entered school. Their aims in life, the social needs of the community, and their social instincts were entirely ignored by this artificial method of grouping. In teaching the " class " the teacher usually went about " covering " a course of study. It was assigned and presented in detail. The result was that neither the individual nor any special group received much benefit.

2. Many pupils because of their advanced abilities were injured and made lazy by listening to explanations which they did not need. Other individuals, after a few attempts, became hopelessly lost because they were either slow or unfitted for the work. This feature of the class has been likened by Frederick Burk to the lockstep

of prisoners. "There are misfit schools," he says, "misfit texts and studies, misfit dogmas and tradition of pedants and pedantry. There are misfit homes, misfit occupations and diversions. In fact, there are all kinds and conditions of misfit clothing for children, but in the nature of things there can be *no misfit children.*"

3. The results of the formal class method of organization are few, indefinite, and are unlikely to function. Since the child is taught only in the classroom, he usually drops what he has learned there when he goes out into the real world.

4. The educational scheme, according to Holmes,[1] "has been organized to fit the average normal child. Until very recently it has never occurred to educators to differentiate the educational scheme to fit different degrees of mental endowment." It might be well to add that there is no such creature as the average child. The average, being the result of a mathematical computation, can, of course, apply to no special individual. It is a hypothetical term.

These and many other defects of the traditional formal class recitation have led educators and administrators to develop methods of teaching and organizing which will more nearly reach the ends for which education is designed. It would almost seem as if the old style organization considered that the child and the community were made for the school. To-day we are stressing the fact that the school must be adjusted to the community

[1] School Organization and the Individual Child. Worcester, Mass.

and to the individual as a representative of the community.

Social-Individual Reforms. The traditional class is being reorganized along two lines: (1) adjustment to individual needs in selection and presentation of school work to meet the needs of every child, no matter how remote the corner in which he may sit or how different he is from the rest of the group; and (2) the use of natural community situations and group life to stimulate greater activity and interest on the part of each individual, and the coöperation of different individuals in solving problems which arise from social needs.

There is no conflict between social and individual instruction. The demand from the social side is that every individual be given opportunity to develop along the lines in which he may function best both for himself and for society. Whatever is best for society is best for the individual in the long run, and whatever is best for the individual is best for society. This is a very difficult and complex piece of educational philosophy to administer. But it is so important and its solution is so absolutely necessary to the highest success of the school that its complex nature must not prevent attempts at solutions. Administrators who have felt that they must sacrifice individuals to school machinery in the name of society have been mistaken, and those who declare that there is no need for social adjustments among individuals in training are equally wrong.

The above propositions may be considered by many

as attacking a "man of straw," in that no one of importance in education has found opposition between the individual and society. However, there are different groups who have preached the individual and have said little or nothing of socialization, and there are many more groups who have talked of society and socialization and have been very vague as to the position of the individual in social adjustments. The facts in the case should be clearly stated so that no appearance of a conflict need occur. Persons who speak of socialization should not cease to speak of the need of individualization, and the individualists must reciprocate. It is also time that the different means of reaching these two ends should be considered in relation to each other and practical methods presented to the teacher.

One of the best statements on the individual side has been made by a man whose social viewpoint cannot be questioned. The following quotations are taken from Suzallo's introduction to Thorndike's "Individuality." [1]

"As a result of these major forces, and of some other minor ones at work in our professional thought, the reaction against the blight of uniformity in teaching has deepened. It has expressed itself positively in the demand for administrative and instructional means that will produce an increased regard for individuality.

"When the supervision of teachers became as inflexible and as unindividual as the teaching of children, the problem of individuality in education became an acute profes-

[1] Riverside Monograph. Houghton Mifflin, 1911, p. 56.

sional one. Particularly was this true in large city school systems, where the mere bigness of the situation obscured both the individual teacher and the individual child."

Factors to be Considered in Individualizing Instruction

Individual Variations and Differences. One of the best summaries of scientific investigations of individual differences has been made by Thorndike.[1] The extent and nature of these differences have been described by him in the statement:

"If we could thus adequately describe each of a million human beings — if, for each one, we could prophesy just what the response would be to every possible situation of life — the million men would be found to differ widely. Probably no two out of the million would be so alike in mental nature as to be indistinguishable by one who knew their entire natures. Each has an individuality which marks him off from other men. Each has not only *a* mind, the mind of the human species, but also his own specialized, particular, readily distinguishable mind. Even in bodily nature, indeed, men differ so much that it would be hard to find, amongst a million, two whose features are just alike, who are equally susceptible to every disease, who have identical bodily habits. The differences in intellect and character are far greater."

The various ways in which Thorndike found individuals to differ:

[1] Educational Psychology, Vol. 3, and Individuality. Riverside Monograph.

1. Differences in single traits. In this respect individuals differ in every trait that is known to the human race. In any group of one age, no matter what the previous training has been in school, individuals will differ all the way from lowest capacity to ten or twenty times this amount or quality.

2. Differences in complex traits. When single traits are combined, and this is always the case in mental effort, the differences are multiplied in ratio to the complexity of the function.

In school subjects Burk[1] found the following variations: In primary reading children in the same grade took from 33 to 111 days to complete the "Free and Treadwell Primer." Of 75 pupils in the high first grade the Progressive Road to Reading, Book I, was finished by the most rapid child in 14 days and by the slowest in 180 days. In the low second grade the most rapid of 60 pupils finished Brooks' Second Reader in 17 days while the slowest took 182 days. In the high fourth grade the most rapid of 43 pupils completed Stepping Stones to Literature, Book 5, in two days while it took the slowest 106 days.

In arithmetic like variations were found. Of 76 pupils in the same grade it took the most rapid 15 days and the slowest 120 days to complete addition. Of 54 pupils in the same grade it took the most rapid 26 days and the slowest 145 days to complete subtraction and multiplication.

[1] Two Years in Individual Instruction. California State Normal, San Francisco.

Burk goes on to show that variations as great were found in the progress of children in the same grade in geography, in American history, in language, and in grammar.

Variations in quality of school work are as great or even greater than those in quantity. Thorndike [1] makes the following statement, based upon his observations and investigations: "It is by no means very hard to find seven-year-olds who can do intellectual work at which one in twenty seventeen-year-olds would fail."

These large individual differences are not so much due to the methods used in school as to outside influences. The experimental work of Rice and others has definitely shown this fact.[2] These differences are due chiefly to *heredity*, while to a lesser extent they are due to outside environment. Thorndike has listed statistical studies to show that abilities in spelling, art, and music, and judicial abilities are inherited, and quotes, with slight criticisms, Pearson's studies which show that vivacity, self-assertiveness, introspection, popularity, conscientiousness, temper, general ability, and good or bad handwriting are inherited and also are influenced to a large extent by home conditions. Goddard [3] and others have definitely shown that subnormal mentality is inherited, and that the school can never bring the feeble-minded up to normal.

[1] Educational Psychology, Vol. 3.
[2] Articles in The Forum, Vols. 23, 34, and 35.
[3] The Kallikak Family.

Stereotyped Work Must Be Avoided. With such divergent individual variations within any given class it is patent that stereotyped work is sure to injure some individuals. Uniform procedure that will not adjust itself to any individual is a drawback to the entire class. The child who is slow is likely to be too slow to profit by the class work; the child who is medium does not remain the same all the time but is medium or "average" because he has been both slow and quick at different times; the child who is a rapid learner is sometimes backward in special types of learning, although a very few children are found to be advanced in learning ability along all lines. Then again the "course of study," whatever it may be, will be more difficult in some parts than others. All groups will not be able to master it in the same manner or at the same rate. These and many other factors make it necessary for class requirements to be very flexible. Many teachers are embarrassed when told that they must study their classes before they can determine what to teach and how to proceed, and some seem to think that a course of study obviates any necessity for differentiating the individuals of the class. But no course should dominate to this extent.

Work should be done in unison only to the extent that there is social betterment as a result. A class in folk dancing or in gymnastics may be materially benefited by such a method. Religious exercises including readings and prayer, patriotic exercises, such as saluting the

flag, and singing may, of course, be done in concert to advantage. Little good is likely to come to children from answering problems in drill work, giving definitions in grammar, writing, typewriting, learning poetry, or reading ordinary lessons in this way.

Illustrations.[1] In drill work a teacher gives problems and is answered by the class as follows: 9 add 8 add 7 add 7 subtract 5 subtract 4 subtract 1 add 7 add 3 multiply by 3 subtract 45. Children give answer in unison. In answering the bright, accurate children will lead and the others will chime in. If such work is to be advantageous, the teacher should call upon one person to give his answer and then ask others to compare with him. Even in this case there is a great chance for the lazy individual, the one who needs the practice, to ignore the work and, when called upon, give a chance answer and, when not called upon first, agree with someone in the class who is usually right. In every case where such an oral drill is used the teacher should work to see that the rapid, medium, and slow workers are called upon in rapid succession. Even then, it will not afford drill in speed to the rapid workers, for if the work is given slowly enough for the remainder of the class, it will be too easy for the few who are superior in this line of activity. Such a drill cannot be relied upon to develop accuracy, for it is rarely possible to discover wherein the

[1] It is not the intention to give many bad practices for illustrations. We should stress what is right. However, teachers often persist in some types of work which are bad, thinking that they are illustrating advanced theory.

child who is wrong makes his mistakes. Its value lies in the stimulation afforded a sluggish group.

This is the kind of problem that is most often used in oral arithmetic drills. Instead should be substituted such problems as, 15 add 9, 50 subtract 14, \$1.00 subtract 13 cents, $20\frac{1}{2}$ multiply by 7, etc. Ordinary purchases of groceries, dry goods, gasoline, etc., involve such calculations. The rapid children may be helped by scoring the time it takes to get the answer. We thus have drill in speed for everyone. The processes, being simple, do not allow the slow child to become lost. Accuracy should be scored, and the drill is not so complex as to prevent a child or the teacher from discovering where a mistake is made. A good way to insure everyone an opportunity for a score in accuracy, which is much more fundamental than speed, is to supply each child with a slip of paper upon which he writes his answers. At the end of the drill period the correct answers are read by the teacher. Every child may grade his own results, or the papers may be exchanged and checked. In this way a teacher may soon discover special individual weaknesses. If a child continually fails on a problem involving the multiplication of a small common fraction, he may be furnished drills for this sort of error.

Written arithmetic drill may be considered in the same way. A teacher puts several long addition problems upon the board. These should involve practical and useful figures such as may be found in grocery bills. The rapid children solve five of the problems, the "aver-

age" child solves three, and the slow child solves two. In every case, accuracy is scored, and those who make mistakes are required to discover them and bring in, correctly solved, any problems in which mistakes were made.

Teachers often make the mistake of calling for answers when only four or five of a class of twenty or thirty have finished. This, of course, is an injury to the majority.

It might be said that the child who is able to solve five problems in a drill lesson while the remainder of the class is solving three gets practice which he does not need. However, this depends upon the standard to be attained. When he reaches this standard, and the Courtis standard is a fairly good one for fast workers (although no school should insist that the slow children reach it), he should be excused from drill and be allowed at this time to occupy himself with work which will be more beneficial to him.

Drill in spelling often fails to accomplish very much because the individual is not provided with proper stimulation and exercise. The old method of pronouncing a word which is then spelled in unison by the class does not get very far. A method which requires every child to attend to every word and its special peculiarities is to write it on a flash card (any ordinary card large enough so that all may see the entire word) with the peculiar parts underlined as follows: *sep a rate.* This is exposed for a period long enough for every child to get a good visual picture of it. The card is then removed and the class pronounces and spells the word in unison. Fol-

lowing this, each child writes it and underlines the peculiar part. The words are then collected and corrected by the teacher. Every child has to give close attention to the flash cards else he cannot write his word correctly. After being corrected, they are returned to the class for study, the flash-card presentation being the assignment. The grade in spelling should be based upon correct writing the first time as well as in the final test.

Two other stereotyped practices which are quite common are:

(1) A few bright children often are allowed to receive most of the training by teachers who call upon only those who volunteer or upon whom they can "depend." (2) The conscientious teacher may constantly allow the *slow children* to take up the time while nothing is provided for the more rapid workers.

Saving of Waste by More Individual Methods. There are several types of saving other than that directly connected with the individuals in the classes. One of these is the saving to the community by cutting down unnecessary expenses. Money is saved by using more individual methods in the following ways:

1. Waste from retardation is eliminated. It costs as much money to send a child through a grade the second or third time as it does the first. His parents are immediately affected by being forced to maintain him in school every extra year it takes him to graduate. The entire community must pay more taxes whenever the number of repeaters reaches the point where extra teachers are

necessary. In a school system of one thousand children twenty-five per cent retardation will mean that 250 children are being taught a second time. This will undoubtedly require additional teaching force, and if it is not supplied, greater inefficiency than ever will result from the large and heterogeneous classes which result. Then there are the books, seats, and floor space, which must be maintained for these extra pupils. Ayres [1] has calculated that in 29 cities which he studied, repetition of grades required 98,000 extra years of instruction. At $29.27, the average annual cost of schooling a child in the United States, it will cost these cities a total of $2,868,400.

It is obvious, therefore, that a teacher who is able so to treat a backward child that he is promoted when he might have failed accomplishes a direct saving to the community. There is also a direct saving every time a child is enabled to complete a course in less than the regular time. Since Burk has demonstrated that most children may finish the eight grades in from five to seven years if they are given proper individual attention, it would appear that from one to three years is being lost in most places.

Burk goes on to show that in the old system (the one that is still in common use) there is waste due to "friction," in attempting to teach all children what only a few have occasion to learn, that the size and capacity of

[1] Russell Sage Foundation Report, Effect of Promotion Rates on School Efficiency, 1912, pp. 13.

the school plant could be greatly reduced by the use of more individual methods, and that there is a great and unmeasurable quantity of waste in the class system.

Some Advantages to the Children of More Individual Methods. The saving to the community is not nearly so important in teaching as is the advantage gained by the children from special methods employed. The child who must "repeat" and the one who finds that he cannot do what is expected of him are injured. The bright child who is held back may lose his brightness. Therefore, even though promotion may not be accelerated on account of administrative policy, attention to the needs of individuals will have large results. Some of these are:

1. Independence and confidence on the part of the children. By doing more work by himself and by thinking out his problems without the help or stimulation of other children, a child soon learns to overcome obstacles which before such training would have appeared impossible to him. This is the ability which the old ungraded district school and life on the farm gave the country boy a generation ago, and which made him a leader in our city life to-day. In being required to work by himself and to get results before the teacher came his way again, he accomplished many feats alone which might have been explained to him. It must be admitted that most of the practices of the old ungraded school were bad, but the necessity for independent work on the part of the pupils was one of its saving qualities.

2. Thoroughness is practiced. If the child is sure that what he does is to receive attention, rather than be looked upon as a part of an agglomeration and never followed to its source, he is bound to feel responsible for completing his tasks. It can be readily seen that in illustrations of drill methods which are too general, given in the first part of this chapter, the child is soon likely to acquire the habit of not finishing his work.

3. Increased interest due to the fact that the work selected is of vital importance to each individual. When the child knows that he is studying words which *he* does not know how to spell and which *he* is very certain to need; that he is practicing in arithmetic problems which are important in life and which he needs to solve because *he* does not have sufficient speed or accuracy in them; or that he is studying and reading in history books which interest *him* and which he should read in order to be a better citizen, his interest and efforts will surely be increased. When we add the definite goal of completion (as has been suggested for writing, spelling, and arithmetic in a previous chapter), and the child realizes that when he makes a score of 70 on the Ayres scale in writing, that when he does not misspell in his written work in spelling, and that when he reaches certain standards in the fundamentals of arithmetic he will be excused from drills in these subjects and will be allowed to turn to more vital and possibly more interesting work, his interest and efforts are likely to be increased anew. And when in addition to this it is possible to adjust school

machinery so that a child may complete more than one grade in a year, the question of interest, especially among the brighter children, should no longer be a problem.

Factors in the Socialization of Instruction

Advantages of Social Stimulation and Coöperation. From the foregoing it will be seen that individual instruction is based entirely upon the relation of the individual to his school work. While this view is very important, and, as has been explained, is bringing about reforms in some places which will sooner or later come everywhere, there is also another large factor in education which must be taken into consideration. This is the relation of the individual to the rest of society and his education for social efficiency. What he may learn in school is important only as he can use it in coöperation with other human beings. That "no man liveth to himself" was never more true than it is to-day. The social viewpoint includes the individual in his relation to subject matter and adds the factor of his ability to wield himself and his accomplishments in a social world. There are two important advantages of socialization of instruction. They are:

1. The individual can often do more and better work under proper group organization than he can when working alone. Triplett has tabulated some definite results of experiments which show this.[1] In a task as simple as turning a crank he discovered that a child will do

[1] Dynamogenic Factors, Am. J. P. Vol. 9, 1898, pp. 507–533.

better and more rapid work when working with someone else. If competition was very strenuous, the majority of children tested did much better than when working alone, while a few became nervous, over-rigid, and less capable under the strain. This does not indicate that children should never be subjected to this kind of trial, but rather that the slow, uninterested but capable child may be aroused to do his best through proper competition, and that the nervous, easily overcome individual will be helped to take his rightful place in society by a wise use of competition by his teacher. The fact that he quits in a race is an indication that he needs training in holding his own and in being able to put forth his best efforts in crucial situations. Holmes [1] and Montessori [2] have questioned the use of competition in education because of the ordinary unwise practices which make it the center of all school activities. They have substituted individualization and coöperation in tasks, and, although it would be a mistake to eliminate competition from educational work, there is little question that children may be compared with each other too much.

2. Social coöperation. This helps the individual in learning and is an *essential feature of life* which must be developed by education. Back of social coöperation is first of all the simple principle that two heads are better than one. In the content subjects this is especially true.

[1] What Is and What Might Be. Dutton, N. Y.

[2] The Chapter on Discipline in the Montessori Method.

The class becomes a social gathering which has for its purpose the discussion of some problem, project, interest, or need of the individuals who make up the group. When properly managed such a class becomes a *natural* group in contrast to artificial class. The children have mutual sympathies and interests. All of them do not prepare the same lesson. They do not read from the same book at the same time or " keep the place " while one of their number reads. Each individual feels his strength because he is an asset to the class. He has prepared and brought something to it which the others do not know. Of course they all prepare the general assignment in order to be able to understand what is involved in the discussion, but in addition each one of them brings something of value as *his contribution.* When such a class gathers for a recitation, the essential for profitable coöperation is that *each child present something which is both interesting to him and of use toward furthering the project in which the group is interested.* In contrast to this method the old-fashioned recitation has been called " a penal inquisition to discover whether or not little Billy obediently memorized his lesson." Unquestionably the method of calling upon children merely to discover whether or not they have done some required task is fruitless. The remainder of the class have nothing in common with the one who is reciting. If they have studied their lessons, they know what he has to say before he says it. If he has difficulty, they are all the more disinterested. His personal contortions to escape the

THIS PICTURE FROM INTERLAKE SCHOOL, SEATTLE, WASHINGTON, REPRESENTS VERY WELL AN INDIVIDUAL-SOCIAL BALANCE. EACH GIRL MADE HER OWN DRESS; NO TWO ARE ALIKE; YET THE SOCIAL MOTIVE PLAYED A LARGE PART, AND THE ABILITY TO MAKE ONE'S OWN DRESS HAD A DISTINCT SOCIAL VALUE

wrath of the teacher may arouse the sympathies of the rest of the group, but little will be gained by them from undergoing such an experience.

The greatest happiness comes to him who has become a vital social influence for good. When the child finds that he is relied upon by his companions, that they regard him and his service as an asset, and that he is a power in the social world, he begins to realize upon the capital he has invested in education.

The increased efforts and more lasting results through socialization are revealed in an experiment in teaching arithmetic made in St. Louis by W. C. Reavis.[1]

"A mock bank was organized," he says, "in which each member of a class studying stocks became a stockholder. Certificates of stock and other commercial forms connected with banking were worked out and printed on the school press. These certificates were then sold in different denominations to the different members of the class. This stock was sold at market quotations which were listed on a bulletin board by officials at different times during the recitation. The pupils thus became conversant very quickly with the terms used in stock transactions and understood the effect of changes in prices on the value of their personal stock already purchased.

"Problems in buying and selling were next undertaken by the class, and the results worked out first for the individual directly concerned in the transaction and

[1] Social Motive in Teaching Arithmetic. Elementary School Journal, October, 1917, pp. 264–267.

then for the corporation. The newspaper quotations were carefully noted in this connection, and hypothetical problems *were made up and discussed by the class.* When purchases and sales were made and dividends or deficits declared the appropriate commercial forms were used in completing the transaction. This afforded excellent practice in the use of conventional forms, such as deposit slips, checks, and notes."

The factors in socialization in the above work are: (1) the entire class was united into a corporation or natural group, (2) they were studying subject matter which has large social value (everybody in these days of corporation should know the methods, advantages, and disadvantages of incorporated enterprises), (3) the problems were made up by the class. There would have been no disadvantage if the teacher as a sort of senior member in the corporation had also taken part in making up the problems. Teachers of classes which have not been socialized before will find that they will need, at least for a time, to become active coworkers with the children. As the work progresses, the children will show more initiative and will not need so much leadership if they have been helped in the right way.

The illustration above was also well motivated and an excellent project.

Following this work a test was given. "The problems were taken from the Stone and Southworth Arithmetic, Book 3, p. 194. The time was arbitrarily set at twenty-five minutes, and work stopped when time was called."

The following are the problems:

1. What is the market value of 35 shares of North Western stock at $43\frac{1}{2}$ per cent above par?

2. What would be the value of the same stock if sold at the same rate below par?

3. I receive a stock dividend of $1728. This is at the rate of $14\frac{2}{5}$ per cent on the par value of my investment. How much of the stock do I own?

4. A man exchanges 170 shares of stock worth 103 in the market for a cottage on the seaside valued at $8510. The difference was made up in mill stock at a par value of 50 per share. How many shares were there? Leave brokerage out of the account.

5. A gentleman bought 1200 shares of railroad stock at 115 and was glad to sell it at 58. What did he lose?

6. The Atlantic Steamship Company is capitalized at $8,000,000. The receipts for the year are $16,400,000. The expenses are $14,800,000, $600,000 is put into a reserve fund and the remainder distributed as a dividend. What rate per cent of dividend was declared?

7. How many hundred dollar shares of mining stock can be bought at 188 for $3750, and what sum will remain? (Parts of a share are not sold.)

8. I receive $2133 as the net profits of stock bought at par and sold at 107. How many hundred dollar shares were sold, allowing $\frac{1}{4}$ brokerage?

9. My broker paid me $8585 which he had received for Old Colony railroad stock sold for me at $\frac{1}{8}$ brokerage. How many shares did he sell at 215?

10. In the N. Y. stock market 50,000 shares of railroad stock were bought at a premium of $22\frac{7}{8}$, and sold the next day at a premium of $26\frac{3}{4}$. The brokerage in each case being $\frac{1}{8}$, required the profits.

The problems have been given here to illustrate their difficulty. It is often contended that socialized methods are "play methods" and do not call for hard work. The teacher must not make the mistake of allowing the work to become easier and the children should not be allowed to follow their passing whims. Socialized work, like all the other modern innovations, should result in more and better results as measured by any acceptable standard.

"The class work was completed March 15, 1917," to quote further, "and the foregoing test was given March 16. There were 28 pupils in the class. Of these 21 were present and took the test. Fifteen pupils worked all the problems correctly in twenty-five minutes, two pupils had nine right out of nine attempts, one pupil had eight right out of nine attempts, and three had seven right out of seven attempts."

The lasting influence of the work is shown by the same test being given on September 5, 1917, following an interval of 90 days in school, during which time no attention had been given to stocks, and a vacation of 80 days. Of the fifteen pupils who had ten rights out of ten attempts, thirteen again made perfect scores in the same time, one fell to eight rights out of eight attempts, and one was not present to take the test. One pupil raised his score from seven rights out of seven attempts to nine rights out of nine attempts, one from seven rights out of seven attempts to eight rights out of eight attempts, one from eight rights out of nine attempts to nine rights out

of nine attempts, one changed from nine rights out of nine attempts to nine rights out of ten attempts, and one who was absent from the first test made a score of nine rights out of nine attempts.

Such remarkable results are in evidence in many places where real concrete work is given and group activity used as a motive.

The following statement taken from the aims of the Francis Parker School will illustrate this principle as applied in active school work. "The demands of good citizenship require that the school gradually develop in the child a growing social consciousness. The self-centered individual of the kindergarten and primary grades should become, as the school years pass by, more respectful and appreciative of the rights of others and more sympathetic and tolerant towards those of various temperaments and conditions of life.

"To realize this development in the pupils there should be provided, in increasing amount throughout the years of school life, opportunity for the child to think less of himself as an individual and more of the community as a whole, of which he forms but a single unit. Conditions calling for unselfish social service on the part of the pupils should be consciously created by the school; service which has a coöperative and community interest. These opportunities should be given, (*a*) in the classroom, (*b*) in the school community as a whole, (*c*) in the larger community outside the school. This means that interest in social service on the part of the

pupil should gradually expand throughout the school course. At first his social horizon is bounded by the walls of his classroom, then there dawns a consciousness of duties and responsibilities to the school community.

"The standpoint should gradually change from one of selfish interest in society for the sake of what it can contribute toward individual pleasures to the realization of the duties and responsibilities to society for the sake of greater pleasure and benefit to all."

And it might well be added that the surest way for the individual to become powerful and successful is to use his intellect in such a way that the social group may realize benefits from his work. He must learn how to clothe and market his ideas and discoveries before he can realize upon them, and *in the final evaluation of the efforts of men it is found that long practice in "putting their ideas across," in not only having good ideas but in being able to influence others by using and expressing them properly, is one of the crucial features of education.*

The illustration previously given of socialized arithmetic practiced in St. Louis is one in which coöperation among the children was the dominant motive.

Social Needs Are as Important as Those of the Individual. The work of the school should be directed to the solution of social needs even while it is taking care of the needs of the individual. Social needs are those which arise from the demands of the world, the government, the state, the city, and the community. In adjusting itself to society the school uses methods and

selects subject matter which solve social problems. The old type of school in rural communities often developed in the children a dislike for their home environment and made them want to migrate to the cities. The schools in the cities often made poor professional men of boys who had good abilities in mechanical lines or, if they could not become doctors, lawyers, preachers, or teachers, the teaching they received in school made them dissatisfied with their lot, and as a result they were poor workmen and poorer citizens.

It is now fairly well understood that arithmetic, geography, English, history, vocational subjects, and all the others must be taught in such a way as to help in the solution of social problems. For illustration consider arithmetic: the boy on the farm should be made a better, happier, and more contented *farmer* by taking arithmetic in the rural or consolidated school. He should be led to see that alfalfa, potatoes, apples, hens, hogs, turkeys, geese, etc., provide him with delightful arithmetic problems. He should learn that wheat, hay, corn, and food of any kind that is a product of his *father's farm* is furnishing problems in the pits and stock markets of all the world, and that the modern farmer may be the equal of any man in any calling or profession so far as being mathematically scientific and expert goes. He should learn of and work out in his own problems; the taxes which his father pays on crops that are in storage, on his farm, on his horses, cattle, and other live stock, on his automobile, and on his bank account, and he should learn from

problems involving accurate statistics just where the money derived from these taxes goes. He should also be led to discover that insurance, weights and measures, fractions, decimals, interest, percentage, and mensuration are all vitally connected with life on the farm. At regular intervals the problems should be taken from the home community, and they should be problems vital in real situations.

This is socialization of arithmetic in a rural community. It is being accomplished in many places. *In the city the same type of work may be done.* How this is accomplished in Indianapolis has already been described in the chapter on The Problem Method. Other subjects may be socialized in the same way. History, civics, and geography should be based throughout upon the home community; and the truths learned of the home community, state, and nation should be a constant basis for comparisons with what exists or is happening in more distant places. This is as necessary for spelling, art, or sewing as for geography. There are definite community situations involved in the teaching of every branch of the curriculum. These must be utilized. As a result the child not only becomes a larger individual but he is also a better citizen of his home community, he lives a larger and a more interesting home life, and the community as a whole is made richer.

Illustration of Social Failure as the Result of School Practices. The following quotation is an illustration of how education has been ruinous to many communities:

Now upon a journey through rural New England you shall see fine old mansions, showing by their architecture that they date back well towards the beginning of the nineteenth century, and ample old homesteads with their spacious barns, all of them more or less in a state of decay. Of many, nothing but the cellar hole and an, at first sight, unaccountable orchard is left. These were the homes of a race which lived and prospered, which cleared the land, and built homes, and added barn to barn, which accumulated wealth, and gave virile expression of itself in church, in state, and in educational institutions. *But that race all allowed its sons and daughters to be educated away from the farm, the country, and from the state.* In their place today we too often have a *dwindling town, a neglected farm, a closed church, an abandoned schoolhouse.*[1]

In every subject he teaches it is the duty of the teacher to assist in enlarging and welding together the life of the community in which he works, be it a large city, a suburb, a village, or a rural district. Education, culture, refinement, and ambition are best when they play a part in the life of the home and of the home community.

Relation of Individual Instruction to Socialized Instruction

In giving an individual-social balance to the work of the school, the teacher must work with the following principles in mind:

1. Every individual is different in every trait or combination of traits from every other individual.

2. Both for the sake of the individual and for the welfare of the community the strong points in each in-

[1] U. S. Bureau of Education, Bulletin No. 20, 1912.

dividual which are of social or individual value should be developed and made stronger.

3. The economic and social independence of its individuals is fundamental to the growth of any community.

4. Therefore, when a teacher helps an individual to become larger and stronger and more independent, he is also helping the entire community.

5. Not only the independence of individuals but also their coöperation is necessary. It is necessary for both individual and community success. The school must give constant training in coöperation.

6. When working in coöperation with others or in competition with them, the individual can do more and better work if the group is wisely managed. In all such work the *teacher must be the stimulating and guiding force.* The results will be entirely dependent upon how he organizes and directs either individuals or groups.

7. In every recitation and in every assignment the teacher should seek to make the individual a better citizen, citizenship being looked upon in its broadest sense. As a result of his life at school the child should live upon a higher plane outside of school. He should have more insight into the affairs of his home and community; he should be able to hold his own in competition with others; he should know how to coöperate with them both to the advantage of himself and of those with whom he works.

CHAPTER XV

METHODS OF ADJUSTING SCHOOL WORK TO INDIVIDUAL NEEDS

THERE are five specific features of school organization involved in adjusting work to the individual child. All the adjustments are, of course, based upon the general assumption that it is the duty of the school to foster individuality and to make every term, day, and recitation that a child spends in school of vital importance to his growth and education.

1. It is, first of all, necessary that the teacher constantly study the general and special features in the nature and life of each child. This study is made the basis of all the rest of the instruction and discipline of the individual.

2. Methods of conducting recitations which reach every individual are necessary.

3. Assignments must be made with the needs and special nature of each child in view.

4. School requirements and the course of study must be adjusted to meet the needs of each child.

5. Promotions, school organization, and school machinery must be flexible.

Studying the Individual and Adjusting Work to His Needs

The Attitude of Leading Schools. There can be no doubt that the desire to reach the needs of the individual is general and plays a part in the plans of every conscientious administrator. However, it is only in schools of the most modern type that anything like successful application of the idea is found.

The Francis W. Parker School gives as one of its basic principles adjustment to individuals and the development of individuality. In the 1916–1917 yearbook we find:

> In the first place in order to preserve the individuality of the children and to enable this individuality to express itself most variously, and thus to provide a richer life for the child, special attention is given to each pupil in order to make him capable of the largest measure of physical, mental, and moral growth. That is to say, the unit is the single pupil, not the class; work is adapted to each child according to his own actual needs and powers, not to the "average" child of the grade or group. Tasks are not prescribed for the mass, regardless of the special needs of the several individuals composing the mass.

In San Francisco Burk has worked out a scheme of instruction which does away with class work. He calls the old-style class instruction "the millstone that hangs about the neck of the school system." His new method has been given several years trial and is reported to be quite successful.[1]

[1] Lockstep Schooling and a Remedy. San Francisco, 1913.

Dr. McCready, director of Wildwood Hall in Pittsburgh, makes the following statement concerning his study of individuals:

> In private practice I make it a rule in all except evident cases to give nothing except a tentative opinion without at least a three months' period of study and observation. It not infrequently happens that I find it necessary to revise early impressions almost completely and to differ radically with the "snap diagnoses" of previous observers.[1]

This statement comes from a man who deals with only the abnormal or at least backward child. If he finds a three months' study of the individual necessary in order to diagnose his case, then surely it is necessary for a teacher to study a normal individual in every way possible in order to be of greatest help to him.

L. W. Mayberry of Wichita, Kansas, in discussing individual work in that city says: "If something can be done to individualize the responses which are to become automatic, less class and individual drill will be necessary. If the teacher will plan to check up the individual achievement of each pupil on the facts presented for drill and to segregate these failures about once each week, the results will be a surprise to most teachers. When the pupil knows what his particular problem is, and when he knows that his teacher and classmates know it, he will be more inclined to attack and solve his problem." [2]

[1] Education, Sept. 1917, p. 4.
[2] Elem. Sch. Jour., Nov. 1917, p. 133.

Methods of Studying the Individual.[1] In studying the individuals in his classes the teacher must not be in a hurry. The most valuable information is of a private nature, and it cannot be acquired by a series of questions; the child himself is unconscious of many of his individual peculiarities. It is often best not to call his attention to them. The following are some of the important factors which should be investigated as soon as possible:

1. *Is the individual vital and up to normal physically?* Many children in school are suffering from ailments which are not known to their teachers. First of all the vision, hearing, and condition of the nose and throat should be known. Where there is no school physician or nurse, the teacher should investigate any case that seems suspicious and advise medical attention where necessary. In some states the law requires such preliminary inspection by the teacher. The condition of the teeth is important. If the child has decayed teeth, toothache, or teeth that are not cleaned regularly, he may be benefited, even to the extent of an entire reversal of attitude, by having his teeth taken care of. Headaches, indigestion, malnutrition, rheumatism, and even heart disease may be the cause of the backwardness of a child. The necessity of becoming as familiar as possible with the physical nature of each child cannot be stressed too much. In being ignorant of a physical

[1] Every teacher should read The Study of the Behavior of the Individual Child, by J. T. McManis. Warwick & York, Baltimore, 64 pp.

peculiarity or defect in a child the teacher is liable to make mistakes in directing him. The parents should be asked to have the child undergo a complete physical examination by a physician. It is often possible to have this done when he is called to the home to take care of some minor ailment. The expense factor is partly eliminated in this way.

2. *Over and under age.* If a child is younger or older than the average in his grade, it is important to know just why he is accelerated or retarded. Knowing his case in its entirety the teacher may be able to help the bright child to advance even more rapidly, and he may be able to do much for the one who is retarded. Very often retardation is due to misunderstanding, injustice, or the clash of personalities in which a child usually comes off second best. Both the accelerated and the retarded child are in positions different from the rest of the class. They need special investigation. This does not imply that every other child should not have individual attention.

3. *The attitude of the individual towards his fellows and their attitude towards him both in and out of school.* This is important for several reasons. A nervous child may be made worse by being teased and bullied. One who is not interested in the school may reverse his attitude after being placed in the right social atmosphere.

4. *The home life and opportunities.* The teacher cannot know too much about the child's home environment. The education of the father and the mother, the

salary or income, the ideals of the home, the home duties of the child, opportunities for improving reading, the kind of food that is served, how he sleeps (window open, open air, windows closed, by himself, in the same room or bed with others), are father and mother both living, does mother work outside the home, etc. The teacher should never visit the home for the mere purpose of investigating. Regular teachers with full work, especially in cities, should not think of taking on this extra burden. Home conditions can usually be quite accurately determined through casual conversations with the child, through his compositions, and from accidental statements. The parents should be urged to come to school during the regular session at least twice during the year. A wise teacher will learn as much from the parent about the child's home life as the parent does about his school on these visits.

5. *Special interests and capacities.* Any special abilities which are of value should be watched and their exercise encouraged. Children who are backward in school may become even brilliant if attention is given to their interests and capacities which lie outside of school requirements. Such children are often merely discouraged because of a few difficulties at school. When they learn that the things they like to do outside of school are considered of value by the teacher their self-confidence is increased. By asking a child to explain his stamp collection, his rabbits, pigeons, or chickens, his wireless, a fishing or hunting trip, or something else of vital im-

portance to him, a teacher may gain his confidence and increase his interest in and respect for the school. *It is the duty of every teacher to advise and inspire each child to work along lines which will lead him to economic and social success.* By looking for his strong points and indicating their value the teacher may often start a child to working along lines which will ultimately mean success in life for him. Anyone who reads the biographies of great men and studies the influences in their childhood which made for their final successes will be impressed by the value of such advice and suggestion.

Individualization of the Recitation

There are two vital elements to the individualization of the recitation. First, every child should have something to do during the entire recitation. Various members of the class should not be allowed to remain idle while attention is being given to others. Second, the work should be adjusted to the different individual needs. It is possible only to approach these ideals in an ordinary recitation, but attention given to them is likely to bring about great improvement.

The Number of Times Pupils Recite. The proper distribution of the recitation time among the twenty or thirty different individuals in an average class is very difficult. Here is a problem worthy of the best thought and attention the teacher is able to give. Anyone observing ordinary recitations will soon see how inadequate they are from this standpoint. Four or five children usually

do the work, while the others either follow or give no attention whatever. This can, of course, furnish no training to the majority. The teacher must use every effort to see that *every individual is furnished some kind of training in every recitation.*

The amount of talking that is done by the teacher is important in this connection. Even the best of teachers admit that they talk too much and allow too little opportunity for the children to recite. A number of careful investigations have revealed the truth of this statement. A principal or superintendent who will have some apparently casual observer (but who in reality is a shorthand reporter) take down everything that is said in a few classes can easily convince his teachers that there is ample room for improvement in the best of recitations.

" Wilson, '15, cites the investigation of a public school in Manhattan by the Bureau of Municipal Research, which found by reporting 18 recitations stenographically, that teachers were doing the thinking and talking rather than the pupils; teachers used 18,833 words; pupils 5,675, with 420 one-word responses, 208 one-sentence responses, and only 20 extended replies. There were 622 ' what,' ' when,' and ' where ' questions, and but 138 ' why ' or ' how.' Similarly, Stevens, '12, by stenographic reports of 20 random New York classes of 20 – 40 pupils, found 64 per cent of the spoken words teacher activity and but 36 per cent of the spoken words divided among pupils. Different classes varied from 116 to 206 questions and answers in a forty-five minute

period. In 6 history lessons, the percentage of questions involving judgment ranged only from 5 – 27. In a group of seven classes averaging fewer than 90 questions, 63 per cent were memory questions repeating the textbook, in nine other classes, 73 per cent. Horn, '15, in Teachers College Record prints stenographic reports, and Farmer, '14, made use of them in his survey of Wisconsin Normal Schools." [1]

In all such work the teacher should feel that it is for his benefit that reports are being made rather than for the purpose of checking him up. The same kind of work is being done in almost every line of human activity to-day. It is one of the ways of allowing teachers or other workers to see themselves as others see them.

Explanations and Exercises for Single Children or Small Groups. Whenever it is necessary to take considerable time to explain something to an individual or to a small group, the remainder of the class should be assigned something definite to do and the explanation made only to those who need it. Of course, when the explanation to the individual is one which everyone else needs, time will be saved by requiring all to give attention. In this case it should be thoroughly understood that the teacher's explanation is meant for all.

When there are several individuals who are so much in advance of the group that they do not need an explanation which is necessary for the majority, they should be

[1] Micromotion Applied to Education. Douglas and Dealey, Ped. Sem. June, 1916.

given other work while this explanation is going on. In arranging this work the teacher must put off special explanations until the close of the period unless they are of such short duration that those who do not need them may be engaged upon the regular work at this time.

ILLUSTRATIONS:

Arithmetic. Seventh grade lesson in interest.

The lesson is an introductory one in this subject and the problem of the teacher is to explain how to find the interest at any or several different rates for one year. This will be followed later by explanations involving years and months, and still later, years, months, and days.

The problem before the class is to find the interest on $600.00 for 1 yr. at 7%.

The first question of the teacher, after stating the problem, is, "How many are sure that you already know how to solve this problem?"

Five of a class of thirty raise their hands. They are told that they may work a type problem at the board. The teacher selected this problem before the class began. The children pass to the board, and the teacher makes his explanation to the group that is left.

At the close of the explanation all those who understand it are given a like problem to work at their seats. For those who do not understand it the explanation is repeated and they ask questions about the parts that they do not understand.

By this time those who are at the board have finished. The teacher has selected several more difficult problems, and these more advanced children are told that they may go ahead and solve as many of them as they can. In addition, several drill problems in the four fundamentals, in fractions, and in

decimals are provided for those who finish all the extra work in interest. The result is that no bright child is allowed to squander his time. The problem of dealing with children who are so advanced that they do not need any of the work described above will be taken up later in this chapter.

The recitation soon reaches the place where all except one or two of the slowest in arithmetic understand the method. As soon as each one fully understands it, he is allowed to work upon the other problems which have been mentioned above.

The teacher now has left only those who need more help than the majority. While all the others are busily at work he devotes himself to the task of explaining to these backward individuals. He has full opportunity to provide exercise and the type of help which will be most beneficial to them not only in helping them to solve the particular problem at hand but in developing initiative and independence on their part.

Another illustration:

Arithmetic. Mensuration taking care of difficulties found in the assignment of the previcus day.

Six problems had been assigned the day before. At the beginning of the recitation the teacher finds upon questioning that, of a class of thirty, five children were confident that they had solved all their problems correctly. They were allowed to work upon more difficult problems or drill problems during the first part of the lesson while the assignment of the previous day was being taken care of.

Children who found special difficulty with the first problem were asked to solve it at the board. This was repeated with every problem. Only those who had difficulty with a problem were asked to solve it. As soon as any child had overcome his difficulties, he was allowed to work upon the drill or more difficult problems.

In a few moments only those who were in critical need

of help were left. The teacher helped them individually. He could rest assured that he was doing right by all the rest of the group while he was tarrying with one of these individuals, for they all were busy upon work which was suited to their abilities. If he saw that a child was merely making a mechanical mistake, he told him that his method was correct but to look for an error in calculation. When he found that a child was making a mistake in reasoning, the teacher worked to help him to reason for himself and did not merely aid him.

To make sure that children who do not understand do not escape work by reporting that they have solved their problems correctly, the teacher may check the work. When he finds a child making a false report, he takes him to task individually. The children soon learn that it is to their advantage to make correct reports.

The method illustrated above has many advantages. Formerly a common method was first of all to ask — "How many had trouble with the first problem?" then "How many 'got' it?" A child who solved it correctly was allowed to copy his solution on the board. This procedure was repeated with each problem. Those who had been unable to do the work received no exercise but sat at their seats. Those who did not need this particular exercise did the work, which, indeed, was not real work since they had already done it once. After the problems were all on the board, the bright children who did not need the exercise (at least this particular exercise) were asked to "explain" their problems. This they did in turn, but what they said was merely the story of the steps they took rather than an explanation. The

children who missed problems often ignored the entire procedure. It is certain that they profited little by it.

Arithmetic. Learning the combinations in a lower grade. Papers containing problems in addition drills are passed around. Each child is given six problems which involve combinations he is supposed to have mastered.

The teacher places some new combinations on the board and tells the children that as soon as each one is finished with the problems on the paper he may pass to the board and attempt those he finds there. Five different problems are presented in this way.

Games have been arranged (dominoes, card games, games involving the drawing of numbers, etc. They all necessitate adding which involves the combinations to twenty.) The children are told that when any two have finished all the problems on the paper and on the board, they may be allowed to play one of the games.

In playing a game stress is placed upon the ability to play together without interfering with the rest of the group. It is also wise to arrange the drill and the advanced work so that the slow children will have opportunity to play the games. If all have the same kind of work, only the brightest in arithmetic will be allowed to play. This may not be to the advantage of either the slow or the rapid children.

By using variations of the above method a practice teacher in the Training School at Greeley, Colorado, taught more arithmetic the first year in fifteen minutes per day than was required for third-grade children in the state course of study.[1] The children were not pushed or

[1] The teacher in the ordinary common school should note that this result was obtained by a practice (inexperienced) teacher, time not exceeding 15 minutes a day.

hurried. Every means was used to keep them interested and happy.

Individualization in other subjects:

It must be admitted that arithmetic lends itself to such methods more readily than other subjects. In the content subjects, as history and geography, individualization must be done in the assignment rather than in the recitation. In such subjects the recitation cannot be used to furnish exercise when knowledge is lacking. However, the more advanced children may be allowed to recite in accordance with their abilities. The slower ones are likely to profit by listening to these recitations. In art, manual training, and in all subjects involving construction the work during the recitation or exercise periods should be entirely individual. Also such work is possible in written and oral English; the child should be allowed to correct his own errors and to make *his* expression more effective.

Individualization in Assignments

The study period is the ideal time for individual work, and when assignments are made they should be adjusted to the capacities of different individuals in order that all may profitably occupy their time. There is no need for that oft-repeated statement of the idle or bothersome child that he "has" his lesson. Assignments which may properly occupy everyone should be made. In making them with this purpose in mind the teacher need not discourage slow or backward children.

The Flexible Assignment. In dealing with any ordinary class the teacher will find that there is much advantage gained by a flexible assignment.

ILLUSTRATIONS

Arithmetic: Fifth grade assignment in fractions.

Solve the first four problems. Anyone who is able to solve all of the problems will receive credit for doing so. If you do not solve all of them, explain on your paper why you did not.

1. I bought seven gallons of gasoline at $20\frac{1}{2}$ cents per gallon (the present price) and paid the clerk $1.50. How much change did he give me?

2. Six yards of canvas at $27\frac{1}{2}$ cents per yard cost how much?

3. John, Henry, and William have a garden. They sell $2.25 worth of beans. Henry, whose father owns the ground, is to get as much as both of the other boys. How much does each get?

4. If I have ten marbles and give James three of them, what is the smallest fraction his share may be expressed in?

5. Multiply $8\frac{1}{2}$ by 16.

6. Divide $1.00 by $20\frac{1}{2}$ to see how many gallons of gasoline a dollar will buy.

7. How much per year does my car need for gasoline if it goes 116 miles on $9\frac{1}{2}$ gallons and gasoline is $22\frac{1}{2}$ cents per gallon? I drive 5000 miles per year.

This entire assignment is given here not only to illustrate flexibility but also to show that the last problem may be made much more difficult than the rest, thus giving full opportunity for any exceptional child to spend the entire time profitably. The problems are all of value.

No child can justly complain that he does not need to be able to solve them, for they are taken from everyday occurrences. The children should be told that if they cannot solve a problem they should leave it and try the next one, provided, of course, they have applied themselves to it in a legitimate way. They should not be allowed to escape the difficult problem, but should be required to solve it before they leave the lesson.

Illustration in History: sixth-grade class studying the colonial period assignment by teacher:

"Yesterday we finished our study of the New England colonies. Today we shall consider the southern colonies and will take Virginia as a representative. Will you try to find out in what respects the colonists in Virginia were different from those in Plymouth? Look any place in your text where you can find materials. If you finish with the text you may borrow any of the books which I have selected and placed upon my table. They all contain information about Virginia."

For an illustration of a flexible assignment in geography see the first illustrative assignment given in the chapter on The Problem Method.

Adjusting Assignments to Individual Needs. In every assignment it should be possible for each individual to work out special problems of his own or to work to overcome his peculiar difficulties. There are two special features of such assignments.

First, the especially able or more interested children may be given certain work to do aside from the regular assignment. In studying the history of the colonial

period, a child who is capable of doing so may work out special problems and report on them to the class, or he may read widely in biography and other literature related to the events of these times. In geography he may read and report books on travel, commerce, or industries. In written and oral English his work may range from writing lyric poetry and sonnets to the imitation of Stevenson. In no case is it necessary to allow a child to get the idea that there is nothing left for him to do, or that the school requirements mark the limits of legitimate efforts. It is little to be wondered that children should sometimes think that only the work of the regular course of study is worth while in their educations when school authorities so often take this very stand.

The second move in adjusting assignments to individual needs is accomplished by pointing out special places where the individual is weak and allowing him to overcome such weaknesses as a part of the fulfillment of regular assignments. Such work has been described in detail in the chapter on Motives. Let us consider examples of this kind of work in a regular school system in Wichita, Kansas.[1] In that city the experiment was tried of checking the individual's mistakes in spelling, phonics, arithmetic, and other drill work. In the regular assignments he was directed to work on his special difficulties. It is reported that rooms in which this work was done made from two to twenty times the gains made by rooms which worked in the regular way.

[1] Elementary School Journal, October, 1917.

When the study of the special needs of different individuals is made a definite part of the teacher's plan, he has many live and constantly changing problems to engage his interests. The many-sided nature of the different individuals in a regular class can never be entirely known. Illustrations of just what the teacher should look for are furnished here merely as a suggestion for a method of procedure; the special types of mistakes found will depend entirely upon the children who are being studied:

English: Should the individual give special attention to full, direct, and clear statements; avoid "run on construction"; watch tense of special verbs as "has not come," "I saw," "I did," and "I have done," etc.?

Arithmetic: Does the individual make mistakes in adding special combinations, as 9 and 6, 0 and a number, 7 and 6, etc.; in long division when a trial divisor is necessary; in placing the decimal point in division; in reading problems correctly, etc.?

History: Does the child fail to relate the different facts he has read; show lack of concentration; fail to remember the important and give his energy to the unimportant?

Spelling: Records should be kept by each child of the words *he* mistakes in all of his written work. Time should be given him to learn these.

Writing: Analysis of the peculiar discrepancies in alignment, spacing, letter forms, etc., of each individual, followed by practice by him on the special letters and groups of letters in which *he* is found deficient.

If in all of this work the interest of the children is aroused to find and overcome their own mistakes, a great

deal more progress will result and the work will be far less difficult for the teacher. Every lesson in every subject may be made an occasion for each child to work upon some difficulty peculiar to himself or to gain something necessary to *his own* advancement. During study periods the teacher often does his best work helping the individual to discover and overcome *his* difficulties.

Adjusting School Requirements to Individuals

Eliminate Time Factor. First of all the child should be given to understand that it is not how long he studies or remains in a grade that counts, but how well he uses his time and what he accomplishes. When a half hour is given to the study of history, no two of a group of thirty children can be required to master the same amount of work. The school must do one of two things in this connection. It must either make a definite assignment and allow those who finish it before the time is up to do something else, or it must enrich the assignments, broaden the course of study, and expect much larger results from some children than others. The elementary school is not guilty of many sins in adjusting the time factor when compared with the high school or the university.

Definite Goal of Completion. In many subjects, especially those involving drill, a definite accomplishment on the part of the individual should excuse him from further drill. The following limits are suggested as practical at the present time:

1. When seventy per cent of the Courtis speed standard and ninety per cent accuracy in the four fundamentals of arithmetic have been reached.

2. When mistakes are not made in the regular work in decimals and small fractions (or at least in ninety-five per cent of calculations involving them).

3. In writing, when a score of seventy on the Ayres scale has been reached and it is evident that speed is not being sacrificed.

4. In spelling, when the list in the Ayres scale is mastered, or when the individual does not make mistakes in his written work.

With such a goal in view many children who would not improve very much in ordinary practice will work hard and reach it. In answer to the criticism that the school should never be satisfied with work which does not reach perfection one may say that the ability to use the mechanics of writing, spelling, and arithmetic is the end rather than mechanical perfection. The law of diminishing returns signifies that when a child practices writing, for example, longer than he needs to from the standpoint of utility, his time is being wasted. The returns he gets for his efforts are not in accordance with what he has a right to expect. He does not need the extra ability his teacher is making him acquire. The school authorities owe it to him as an individual to arrange work for him which will be more profitable.

Special Requirements in Special Cases. Special requirements should be made for persons who would be injured by being forced to take the regular course of study and meet all its demands. There are many

children who are slower than average in arithmetic. They should not be retarded on account of their lack in this one subject. By promoting them and assigning special arithmetic work to them, the school often saves such children from becoming repeaters, and before the elementary school course is finished, they usually acquire enough mathematics for success in life. Special defects in other subjects should be treated in the same way. Oral reading causes great difficulty to many children either on account of a halting speech or natural shyness. Its value is not so great that a child should be retarded on account of it. Such subjects as writing and spelling should never of themselves be sufficient reason for failure.

The teacher should keep in mind the fact that a class is not a group of children all of whom have the same accomplishments or who have all reached a definite point in all the subjects of the course of study. A class, in the modern sense, is a group of children all of whom are different in all the subjects but who gather in the same room for administrative and social advantages. If retarding a child on account of one or two subjects is likely to injure him in several, he should be sent on. Little trouble will be made for an intelligent teacher in the next grade if he is promoted with the note that he needs special work in these subjects.

Adjusting Classes and Groups

During the last twenty years there has been marked improvement in our educational systems in meeting the

problems of adjusting school machinery to children of various abilities.[1]

Promotion Made More Often. In order to make retardation of less injury to those who fail and also to allow those who can go more rapidly full opportunity to do so, the school year is being divided into several terms with many opportunities for promotion. In the traditional school the child who failed had to repeat an entire year, and there was little chance for an exceptional child to work far enough ahead to finish two years' work in one. With more frequent opportunities for promotion a child who fails may lose only six weeks or three months. His extra term is not spent in reviewing everything that he had the term before, but he takes the work which he needs in order to be promoted. He is not a repeater in any sense. He merely stays a short time longer in the grade.

At present there are at least 214 cities in the United States which promote twice per year. There are 251 which promote at any time during the year and are stressing the opportunity for gifted children to get along more rapidly than the average. Trinidad, Colorado, and Aurora, Illinois, promote four times a year; St. Louis and Galesburg, Illinois, promote three times a year; Stonington, Connecticut, promotes every ten weeks; Salem, Oregon, promotes every six weeks in

[1] See Holmes' School Organization and the Individual Child. Worcester, Mass.; and Woods' Provision for the Gifted Child. Educational Adm. and Sup., March, 1917.

the elementary grades; Mahoney, Pennsylvania, and Hutchinson, Kansas, promote by subject and provide extra subjects for their gifted children. At least 36 cities provide rapidly moving sections for gifted children.

No school system is up to the standard of modern practice unless it has at least three promotions a year. I have given such a scheme the benefit of a three years' trial and find that retardation is practically eliminated by it. Most of the repeaters in the regular schools are injured by being required to repeat an entire year's work. When given the opportunity, only a very small per cent fail to make up in a three months' extra term what they have missed. They also learn a lesson which stimulates them to do better so as not to fail again. The old way so discouraged the child who failed and necessitated so much bad pedagogy, that his educational career was in most cases ruined, and he was likely soon to be repeating again. Under the new scheme the few cases which are the result of inferior heredity or home environment will be made up for by the large number who are able to finish a year's work in two three-month terms. The acceleration will adequately balance the retardation. It is very stimulating to the work of the entire school to have children who show the ability, and others who have failed but have made up their work in one three-month term, go on to the next grade. They are put upon their mettle. Those with whom they mingle in the next grade are also stimulated. The concrete

results of good work are in evidence throughout the entire year, for every child sees and recites with individuals who have obtained their rewards.

Special Classes. In addition to more frequent promotions and the provision for promotion at any time a child shows capacity for it, special classes should be formed. At present a large number of cities in the United States maintain such classes in order to adjust the work of the school to the different individuals. There are at least 122 cities which are making such provision. Worcester, Massachusetts, maintains 20 such classes for gifted children; Boston has 10. The superintendent of the Pittsburgh schools reported to Miss Wood's questionnaire:[1]

"Our system provides for double promotions, elastic promotions, and for special classes within a school. These special classes are presided over by a coaching-teacher whose special function it is to help bright children and retarded children. The classes are not large. We try to limit the number which a coaching-teacher shall have in her room at any one time to eight.

"At present we have 62 coaching-teachers in our elementary schools for which we pay a total salary of some $70,000. Our expense for the psychological clinic may total $5,000 more. *We feel convinced that every dollar we are investing in this department of our schools is an economy rather than an expense. Our board of education endorses it heartily without a question.*"

[1] *Op. cit.*

Work of this type is being done in Salt Lake City, Denver, Fall River, New York City, and many other places.

Specified Time for Individual Work. In a number of cities the school programs are so arranged that special periods for individual instruction are provided. At Ashland and Beloit, Wisconsin, and Galesburg, Illinois, a half hour each day is given over to it. At Racine, Wisconsin, a forty-minute period is provided in both the forenoon and the afternoon for individual instruction. In a great many Junior and Senior high schools supervised study follows each recitation. During this period the teacher is supposed to work with individuals who need further assignments or special help.

The Purely Individual Scheme of the San Francisco Normal School

In San Francisco Burk has worked out a scheme which is purely individual in all subjects and extends throughout all of the eight grades. The methods of carrying out such a plan, stated briefly, are:

1. The entire course of study in each subject for the eight years is planned and printed in a series of handbooks. Explanations of every new step are included. The child spends his time working out the subject matter instead of reciting.

2. The teacher does not conduct recitations. He usually sits at his desk and when a child needs help he goes to his teacher for it.

3. When a book has been completed, the next one is provided, and so on until the course has been finished.

4. Reviews are provided in the books. If a child makes a perfect score, he may be allowed to skip some of the reviews. The child who finds difficulties takes more reviews.

For the purpose of mastering a definite, prescribed course of study the scheme just mentioned is excellent. From that standpoint it is bound to receive widespread recognition. No school can afford to ignore the value of such a method. However, it is valuable only in the phases of education for which the *prescribed course* is designed. An equally important feature of education is the development of the individual as a social being and the uses of social coöperation and the social motive in his instruction. The purely individual scheme may be used in part of the work of any school but not in all of it.

Suggestions for Common School Practice

Some of the topics in this chapter deal with administrative features which are not controlled by the teacher. This brings up the question: what can the teacher do for the individual if he is working in a mechanical school system? The answer is this: he can approach the realization of his ideals by doing as much as is possible in each of the five ways suggested in the foregoing pages. The most fruitful results, however, are likely to come from: (1) the study of individuals, (2) individualizing

recitations, (3) broadening the course of study for gifted children, and (4) focusing the application of individuals upon their own needs. Even in the most extremely traditional school there is opportunity for good work along these four lines.

CHAPTER XVI

THE SOCIALIZATION OF INSTRUCTION

The Primary Features of Practice. There are five definite practical features of socializing instruction, and it is the aim of this chapter to assume the necessity for socialization as already demonstrated and leave out most of the theory. Concrete illustrations will prove their usefulness far better than theoretical discussions.

1. The entire school should be socialized.
2. Each room and grade should be socialized.
3. The social method should be used in recitations as frequently as it seems to be profitable.
4. The subject matter that is assigned should be selected from the community or have social value whenever it is possible and profitable.
5. In the regular lessons and in dealing with the children a close relation with the home and the life of the community should be established.

In realization of all of these aims the teacher should understand that the fundamental principle in any socialization is the value, stimulation, and help received by each individual when two or more are gathered together. We must bring this value to the front. As a result we

have the *social motive, coöperation,* and the gain from ideas absorbed through *imitation, competition, and suggestion.* It is possible to carry on a class without deriving benefit from any of these advantages, but it is the business of the wise teacher to socialize the work and thus make capital of the natural resources which school and class work provide.

The Socialization of the School

A school may consist of from one to fifty rooms. When there is more than one room, the spirit and work of the children in the different rooms is improved by bringing about friendly relations between them. The children of a school should feel that they are citizens and members of the entire school as well as of their special rooms. When this ideal is fully realized, they enjoy going to school and do better work while there. There are three special ways of socializing a school.

1. **Projects by the Entire School.** There should always be some activity in which *the school* is taking an interest. When something of this nature is provided, it becomes possible for every child in every grade to feel that he has a responsibility to the school and a definite opportunity to do something for it.

Illustrations of social school projects:

A thrift stamp campaign. In many cities the schools were provided with regular United States thrift stamps. In some places, for example in Seattle, the principals made the purchase of these stamps the center of a

patriotic and saving campaign. At a certain time each day all the children who had brought money to buy stamps were sent to the office of the principal, who took charge of the sales. In this way he came in regular contact with most of the children. They soon learned to know him as a coworker in their campaign rather than as a disciplinarian. Some of the principals testified that this period became one of real interest to both themselves and the children. The stories of how they had been able to obtain their money, as spontaneously told by them when they came to buy stamps, gave the principal valuable light on conditions in the homes and upon the natures of the children.

Schools were not rated by the actual amount that the children saved but by the per cent of the enrollment which was regularly saving. A $200.00 a week school might not stand as high as a $25.00 a week school, for the first one might be only a sixty per cent school while the second might be a ninety per cent school. In this way the schools of the poorer districts were not hopelessly outclassed.

The many ways that children worked to help their school secure a large per cent of regular savers illustrate the true social value of such a project. Meetings were held to discuss ways of getting every child into the game. Plans were laid to provide work for the child who could not get money from home, so that he might become a saver. One boy brought a quarter to school and told his companions that he was going to buy ammunition for

his rifle with it. They persuaded him to buy a thrift stamp instead.

A bird house campaign. Several years ago the superintendent of the St. Cloud, Minnesota, schools discovered that the boys in the city schools were killing birds with slingshots. After several futile attempts to stop it by conscientiously collecting all the slingshots brought to school and by regularly lecturing the boys for their wickedness, the idea of starting a bird house campaign was evolved and put into practice by the instructor in woodwork.

The plan was to have each boy in each school provide homes for as many birds as would accept them and to look after the welfare of any birds that would make their homes in his houses. It was only a matter of a short time until bird houses became one of the chief topics of conversation among the boys of St. Cloud, and he who dared injure a bird did so at considerable risk to himself.

The project worked out on a large enough scale to socialize an entire school system. There is no question about its bringing the boys of the different rooms in every school into closer sympathy with each other and with the work of the school in solving the bird conservation problem.

A school aquarium. At very little expense an aquarium twenty or thirty feet long by fifteen or twenty feet wide can be constructed in some protected spot on the school grounds. The chief expense will be the piping of the water. The children should understand that the aqua-

rium belongs to them and that they are to care for it and the fish and animals in it. Each spring they should be allowed to take a day to fill it with water and the boys and girls should be encouraged to bring fish of all kinds, frogs, crayfish, clams, water spiders, salamanders, etc., to stock it. In the late fall, if the climate is such that the water would freeze to the bottom of the pool and so kill all the fish and animals, the children should be allowed to drain it and take the animals to streams in the neighborhood or to indoor aquariums. The important feature is the children's part in care, stocking, and protection. Many schools have aquariums which are cared for entirely by the janitor, and the children are warned to stay away from them.

Other like projects are the beautifying of the school and grounds by the children, the planting of trees by the children on Arbor day, a school plan for special days, a school skating rink, etc. In any undertaking of this nature as much socialization as possible should be brought about. The way these projects are often done does not bring about very worth while or lasting results. The following method of socializing and developing the Christmas spirit was used in the Francis Parker School:[1]

School Socialization and the Christmas Spirit

The following plan of utilizing the school shop has been used as a means of developing a broader spirit of Christmas among children, dealing with altruistic motives rather than

[1] Taken from The Social Motive in School Work, Francis Parker School Publication, June, 1912.

the selfish and personal, and using coöperative rather than individual methods. The constructive interests have been used as a basis, and the play element recognized by introducing the favorite character of Christmas, Santa Claus.

In every household in which there are or have been children, there are countless toys, dolls, books, and games in various stages of dissolution and disrepair. Many of these have outlived their usefulness in that particular household, but with the addition of a little spare time and ingenuity, together with a touch of color to brighten them up, they would still make most acceptable Christmas gifts to many a child in poorer circumstances. To utilize this repair work as a feature of our manual training a "Santa Claus Annex Shop" was established.

It was suggested to some of the children that such toys could well be repaired in the school. Notice was sent to the parents that the school would undertake to put into good condition such toys as could be furnished. These toys would then be given to settlements in more needy parts of the city for distribution.

The next step was to present the scheme to the pupils of the whole school in a "morning exercise." Upon reaching school one morning the pupils were confronted with the following notices prominently displayed on posters in the main hall.

WANTED — WANTED — AT ONCE

Wanted at once good workers in the following trades:

25 mechanics — must have a good knowledge of auto repair work, aërial machines, boats, engines (both stationary and locomotive), clockwork motors, agricultural implements, wagon repairs, etc., etc., etc.

20 painters — good at retouching. Must have experience in mixing and judging colors and be able to handle brushes well.

20 surgeons — (in hospital). Skill needed in grafting arms and legs and replacing new heads. Those with previous experience in either hospital or private practice preferred.

10 veterinary surgeons — a good knowledge of the anatomy of dogs, Teddy bears, and horses is necessary.

10 book repair men — neat and careful workers, able to handle needle and paste brush well.

10 repair men for game department.

20 wrappers and packers — wanted for packing and shipping department. Only neat workers need apply.

1 foreman and 1 inspector wanted in each of the following departments:

Mechanical	Book Repair
Painting	Game Department
Hospital	Wrapping and Packing

Application may be made in person or by letter. Steady work promised from now until December 20. Good Hours. Good Wages.

(Signed) SANTA CLAUS.

P. S. — This is my busy season, and I have appointed Mr. Wahlstrom superintendent of my Annex Shop at the Francis W. Parker School. Particulars may be obtained from him or from any of the teachers in said school.

Applications should be in by December 1.

The value of the Santa Claus Toy Shop was manifested in many ways. Aside from the thought of working for others, which was at the bottom of the scheme, the feeling of good-fellowship which pervaded the work was most noticeable. The kindly and sympathetic interest of the older boys who filled the rôle of inspectors and foremen in the struggles of the younger people in some difficult piece of repair work helped to unite the school. High school boys "renewed their youth"

and also discovered some interesting applications of their recent physics experiments while investigating the "innards" of some mechanical toy. The children of primary grades were busy with paste pot and shears, and it would be hard to recognize in the gay and festive results of their labors the commonplace cardboard boxes which had been brought in for the packing of the finished product.

Although there was a spirit of play in the work it was interesting to note the seriousness with which the pupils entered into it. Of no small value was the insight into industrial organization and subdivision of labor, which was appreciated by even the youngest worker. And underneath it all was the joyous spirit of Christmas, the knowledge that the work was a labor of love, in order that someone less fortunate might have his share of Christmas joy.

2. Regular Assembly or Morning Exercises. Whenever there is a room in the building that is large enough, it should be regularly used for general assemblies of the entire school. By gathering together at regular intervals the children come into contact with each other and acquire mutual interests. When there is no room large enough, many schools use the hallway for assemblies. In the early fall and in the spring and summer they may be held out-of-doors.

Such assemblies for elementary school children have long been a central feature of leading schools. In the Francis Parker School they represent a part of the regular plan of education and are regarded by those in charge as being as important as any of the regular course of study work.

The following is a description by the principal of how a school of from 300 to 350 pupils worked out a successful system of assemblies:

"After reading of successful work of this kind in other schools, all the teachers and the principal agreed that some kind of regular assemblies in which all the children should participate would materially help our own school. We had a large room which was used for group activities, singing, meetings of parents, etc., and we decided to make use of this room for our assemblies.

"At first we planned to have them once each week at the second hour (10 o'clock). Experience soon taught us that it would be wise to give a definite amount of time and demand that programs should be planned which would not take more than the allotted time. The period was finally fixed at from twenty to twenty-five minutes.

"In schools which had described their programs in booklets and in magazine articles the following features had been stressed: (1) informality of discussions and programs, (2) programs planned by the children who volunteered of their own accord, (3) some regular phase of the school work should be presented rather than spectacular materials of the old rhetorical nature, and (4) as many children as possible of the room performing should take part rather than a few who had special abilities.

"In beginning our work we soon found that we could not count on an assembly once per week and comply with the four ideals of the preceding paragraph. Yet those

who were doing such work declared that these ideals were absolute essentials, and, furthermore, they maintained and illustrated by pictures and otherwise that they were successful in realizing them.

"As a compromise we decided not to give up the assemblies because we could not come up to the regulations for ideal work, and we went ahead as best we could. After waiting for someone to volunteer to give a program until two assemblies were missed, the principal went to the different teachers and told them to work out something, no matter how 'ordinary,' and be ready to present it. He drafted a fourth grade for the next week. The assembly came in due time. The fourth grade appeared. All the 'ideals' were violated. The program was very formal. The children sang some songs which, it must be admitted, came from their music work. A composition was read by the best pupil in the room (violating rule No. 4). A declamation was given by a girl who liked to declaim, and a violin solo, which was encored, finished the program.

"However, this was a beginning. Room followed room, the programs usually quite stiff and formal. It was useless to attempt to get the children to act 'normal' when performing before a crowd of three hundred of their companions, all the teachers, and usually a number of parents.

"The scheme was continued for three years. Gradually we began to approach our ideals. Our programs became less and less rigid. After long experience both

the teachers and the children became expert at discovering features of regular school work which made splendid exercises for the assemblies. The tendency of the principal to omit meetings on account of lack of material gave place to the regular maintenance of the assemblies twice instead of once per week. The children from the different rooms would go to him and volunteer something for their room. Finally, there were always five or six rooms on the waiting list. The programs gradually improved. More of the mothers came. There were many programs which could be definitely pointed to as stimulating better work in the various school subjects both on the part of the children who gave the programs and those who looked on. The assembly was regarded by the children as a bright part of their school work. Many times the principal overheard children of the various grades make mention of the fact that this was the 'day for the assembly.' Their attitudes and voices indicated that they prized it highly."

This is a very good description of what may be expected in any school which tries to have informal or social assemblies without any previous experience in the work. Even after three years the principal of the school mentioned above felt that the work would be improved with more time and attention. The programs varied in their perfection in reaching his standards. After three years some of them were rated very low. But with experience the majority of the programs became better, and the three years' trial was decidedly profitable.

ILLUSTRATIVE PROGRAMS:

Fifth-grade geography. The school had been able to obtain for its geography museum a set of samples of partly completed shoes. Some were merely soles; others varied from this all the way to the completed shoe. The children made a study of a shoe factory and ascertained just how the different parts were made. They learned of the piece work system, how each worker does only a very small part of the work in making the shoe. They arranged a visit to a shoe factory for assembly. Several of their number were chosen for workers. One was the manager. Another was a visitor. The last named visited the "factory," and as the "manager" showed her the different steps in making the shoe, the "workman" explained it to her so that everyone in the room could understand it. The several (eight or ten) stages of making a shoe were very well explained.

Eighth-grade hygiene. The children of the eighth grade were learning practical hygiene. They decided to give a demonstration before the assembly. They chose one of their number who would represent the "nurse" who was instructing them. She called upon them to illustrate how to tie the different bandages; how to put out the blaze if one's clothing caught fire; how to figure out antidotes for poisons and what to give for emetics; how to sterilize and care for different wounds; how to care for the finger nails and the teeth. This was a very interesting and instructive program.

First-grade arithmetic. A first-grade class which had been doing some especially good work in arithmetic, gave an exhibition in the assembly. They discussed the different common weights and measures and their uses. They took up the pieces of money and showed how well they knew them. They made change with five, ten, and twenty-five cent pieces. They did some very good work in addition and multiplication

and finished by playing some games involving addition. The rest of the school was intensely interested in seeing the little children perform. This program was much more interesting than speaking and singing would have been, although these two forms of expression are valuable enough when not overworked. After this program a boy in the third grade who did not do his arithmetic very well was heard to say to another, "We had better get busy. Some of those little 'kids' can do better than some of us."

Sixth-grade history. The sixth grade planned to dramatize the history of Plymouth Colony for the assembly. They worked for two weeks during the regular history period; wrote their play; made the costumes of cardboard, paper, and cheap cloth; staged and presented it to the rest of the school. It was a great success.

Sixth-grade book club. In their English work the sixth grade had formed a book club. They had their officers who presided at different class periods. They read and discussed good books as a part of their English work. For an assembly a meeting of this club was staged. The president presided. The secretary read some very interesting minutes from the last meeting. Different members reported upon books that they had read during the previous month. Discussions of these books by the club followed. The entire program was quite interesting. It represented excellent rules of order. The books discussed were quite worth hearing about. Children in other grades checked some of these from the library as a result.

Second-grade rhythm work. The second grade had been doing a great deal of rhythm work. In this they had learned many excellent folk dances. At an assembly they went through them for the rest of the children, who showed a decided interest.

Other special work. The assembly was used to stimulate patriotic sentiment. Each room was urged by the principal to master as many of the patriotic songs as possible and to be

able to sing all the words without books. Plans for the entire school were presented here. Announcements were made by children of different rooms of special work in their rooms or of interesting, patriotic, or educational meetings or shows that were going on in town. *At rare times* general discipline was discussed. It does not pay to take up much time in these assemblies either for announcements or instructions by the principal or teachers.

One of the happy results of this and other socialization in this school was the attitude of social independence which it developed in the majority of the children. Whenever one was transferred to another school, he became the social leader and the " star " in entertainments.

Persons visiting the school noted especially the able presentations of ordinary subject matter by children.

The vital points for the principal or teacher who is considering putting such a scheme into practice are the four ideals towards which the school worked. The fact that they were only partially realized after three years must be remembered. As stated in other chapters — and it cannot be repeated too often — most things that are worth while in the improvement of a school must be worked for and seldom come until after considerable lapse of time. They must be evolved.

3. Coöperation and Interroom Interests. The general assemblies which have just been described will serve to interest the children of one grade in what is going on in another. Other ways of coöperation and stimulation between rooms should be used whenever profitable. Some special ways of bringing this about might be these:

(1) Children from one room may visit another. It is usually best for the class to elect two or three children whose work will not suffer from such a visit. They come back and report the interesting things that they have seen, and the children discuss features of the other room which might be employed to advantage by themselves. In some of the schools of Seattle children visit another building. When they return, they report in the same way as described for different rooms. This practice, if intelligently supervised by the teacher, will develop a better attitude on the part of the children towards the work of their own room.

(2) Good work which is done in one room may be sent to another for inspection by the children. A child who has written an extra good composition or who has made an interesting and important discovery may go to another room and read or report to the children there. In oral English the children in the upper grades may practice telling stories in order that they may tell them interestingly to children in the lower grades. In written English the children in one room may write letters to those in another room.

(3) Comparative improvement in regular subjects. If the principal will have made, every two or three months, charts which show the percentage of improvement different rooms are making, they will be a direct cause for better work. The charts should show speed and accuracy in the fundamentals of arithmetic, the number of mistakes per page made in written work (not only in

English but in other subjects), the percentage of improvement in spelling (both in spelling exercises and in all written work). Children will be made to see that their slovenly work causes the per cent of improvement in their entire room to fall. It is best not to make too much of such comparisons because there may be a number of causes for lack of percental improvement. The teacher and the children may be unable to make large improvements because of natural obstacles over which they have no control. For illustration, the improvement in long division should be relatively much larger in the fourth and fifth grades than in any of the other grades, the natural abilities of the children in one room may be greater than those in another, etc. If these comparisons are made too often and are stressed very much, they may lose their force. The ideal way is to use them but to consider that they are only one small factor among many others in the improvement of school work.

(4) Everyday or weekly exhibits. In some schools a large burlap bulletin board is hung just outside the door of each room. Upon this are posted exhibits of good work that is being done in the room. Any written work, drawing, or clippings of interest to the children of the room may be pinned to the burlap. A list of good books that have been read by one or by several children may be posted here. This serves to give the children of other rooms, the teachers, the principal, or anyone who might pass the room an idea of some of the important projects that are being stressed in the room at that time. Such

work should be changed at regular intervals, and as many children as possible should be represented during the year.

The effectiveness of any of these four measures in bringing about larger interests and better work will depend upon the seriousness and tenacity with which they are undertaken. Often they prove very useful for a few weeks. Then they are neglected by both teacher and pupils and become merely a form. Such schemes are worthless unless someone is behind them to breathe life into them.

The Socialization of the Room

Using the Natural Advantages of a Group. Whenever a group of persons gathers, a situation with potentially high educational value is created. The problem of the teacher is to realize upon the natural capital which the class or grade system provides.

Some of these advantages may be used as follows:

(1) Each child should be made to feel that he is a part of a distinct social group to which he must be loyal. He can, first of all, be loyal only if he is doing his best to make a good record for his room in the regular school work.

(2) As a part of the group which makes up the "room," each child should be interested in everything that is going on there. As citizens of this special group he and his fellows feel responsible for the success of the room. They stimulate and coöperate with each other.

Group Loyalty. As an illustration of the power of group loyalty when applied to a room, an experiment in the University Heights School, Seattle, Washington, might be cited. At the beginning of the year the teacher gave to the children as their central problem the development of a coöperative and helpful spirit in the room. At the end of the year the principal asked for a report from the children. In it they were to tell of the different ways in which they had improved during the year. Without special attention being called to it by the teacher every paper mentioned "loyalty to the room." One of these papers is given here:

University Heights School

Oct. 31, 1917 Clarence B . . .

Language, Eighth B.

Dear Mr. Metsker:

I have accomplished quite a bit in this quarter, but I have not accomplished enough. The greatest thing I think I have accomplished is to help others when they need help and to be loyal to the room. I have learned how to do mental arithmetic which will be a great help to everyone

. . . . . .

I expect to become better in everything within the next quarter.

Sincerely yours,

Organizing a Room. In organizing a room of children to secure coöperation in helping everyone in the group make a larger success, the teacher should stress the fact that what is being required and what is being accom-

plished are a part of the work of the group. They are to feel responsible for it. They do not owe it to the teacher to succeed in their work or to do their best in accomplishing any of the aims of the work. They owe it to the group. Thus, when a child has not acted as he should on the playground, in passing in and out of the room, or in any of the regular work, he and the group are made to feel that he has not been loyal to them.

Below the fifth grade such a situation is difficult to create. In the grades above this a wise teacher will have little difficulty in making large use of such a scheme. It has a much more wholesome effect than a plan which requires the teacher to carry all responsibility. In work of this nature the teacher must always be ready to step in and prevent group action from injuring any individual unduly, or from bringing about what would not accord with the ideals of the school. Such a scheme must be regarded as one in which children are stimulated to work as a group by a teacher always in the background. They do not compose an "independent government." The teacher is merely using their growing sense of loyalty in educating them. In developing loyalty children are being helped as much as they are by ordinary school "subjects." An eighth grade organized to solve the following problems for the year:

To see that no one in the room should fail to be promoted.

To come into and out of the school in good order without the teacher watching them.

To keep the room as neat as possible at all times and to make it more beautiful.

To have regular meetings one hour per week to discuss methods of doing the work of the room in a better way and to consider problems which may arise during the week.

Officers should be chosen by the class rather than by the teacher. Their terms should be short, and the teacher should see that they seriously perform their duties.

Morning Exercises for the Room or Grade. Special exercises within each room are just as important as the assemblies for the entire school, which have been described earlier in this chapter. Regular morning exercises at least two times each week in which children and teacher coöperate to do something of value will be a big aid in socializing the room. In schools which do not have rooms large enough for general assemblies such exercises are still possible for each room. Even when there are regular assemblies of the entire school, each room should have its own regular morning exercises. The essential points in properly developing these exercises for socializing advantages are:

(1) The children must be made to feel that they are managing this period. The teacher is their adviser.

(2) Every pupil in the room should regularly take part in the programs in order that each may have his turn at appearing before his fellows. No child should develop the attitude of a spectator. Each must feel that he is a part of the organization.

(3) The regular work of the room should play a large part in the programs.

The city of Indianapolis publishes for its teachers the following list of books which furnish materials and suggestions for this work. They are most valuable in the lower grades where the teacher should play the leading rôle.

Books Helpful for Opening Exercises

Baldwin, James: American Book of Golden Deeds.

Bailey, Carolyn, and Lewis, Clara M.: For the Children's Hour.

Bryant, Sara Cone: Best Stories to Tell Children.
How to Tell Stories to Children.

Beeson, Katherine: The Child's Calendar Beautiful.

Bellamy and Goodwin: Open Sesame.

Cabot, Ella Lyman: Ethics for Children.

Coe, Fanny: The Louisa Alcott Story Book.

Comegys: Primer of Ethics.

Coates: Children's Book of Poetry.

Everett, C. E.: Ethics for Young People.

Firth, Abraham: Voices of the Speechless.

Gow: Good Morals and Gentle Manners.

Harrison, Elizabeth: In Storyland.

Johonnot, James: Stories of Heroic Deeds.

Lewis, Prudence: The Golden Hour

Lindsay, Maud: Mother Stories.
More Mother Stories.

Lambert, W. H.: Memory Gems in Prose and Poetry.

Marden, O. S.: Success.
Winning Out.

McMurry, Lida B.: Classic Stories for Little Ones.

Poulsson, E.: In the Child's World.
Bible Stories.
Spyri: Heidi
Sneath, Hodges, Stevens: The Golden Rule Series.
Seelye, Julius H.: Duty.
Smiles, Samuel: Character.
Self Help.
Duty.
Wiggin, Kate D., and Smith, N. A.: The Story Hour.
The Posy Ring.
Golden Numbers.
Yonge, Charlotte: Golden Deeds.

The Socialized Recitation

Characteristics and Purposes. The socialized recitation is characterized by the large amount of activity by the class and the position of the teacher *in the background* rather than as the central figure. The subject matter of the lesson is so planned by the teacher that the children take it up in a natural way as a project or problem which they as a group must work out. A great deal of stress is placed upon the independence and initiative of the group. The chief work of the teacher, therefore, is done outside the class period. He is a stimulating and organizing force in the recitation, rather than a leader.

The purpose is to train children to work together through more activity on their part. In making the recitation less formal and more like any natural gathering the teacher does away with passivity. In its place come both physical and mental alertness and reaction. Originality is brought into play. For instead of listen-

ing to their teacher or striving to answer a question in a way that would suit the teacher, the pupils take responsibility for questioning and answering. Another child is likely to point out a pupil's error or question him further. Thus, responsibility is developed. All of the powers that are exercised by this method are important to the development of the child. The old type of recitation tended to stifle them.

Limits and Special Difficulties. In undertaking socialized recitations the teacher of to-day has the mistakes and successes of others to guide him. The idea has had wide application with varying degrees of success. Some mistakes that were often made and were overcome only by experience can now be pointed out to the beginner.

(1) In developing larger responsibility and more cooperation on the part of the children the teacher should not turn the class over to a " bright " pupil who becomes a sort of teacher. (2) He should not allow the timid or sluggish child to withdraw from the work or become a mere auditor, but every means should be used to bring such children to the front. (3) The serious work of the subject matter should not be neglected, or any sort of pseudo-parliamentary drill be allowed to become the end of the organization. Recitations are socialized in order to take better care of regular school work, not to take its place. (4) In all of the work the teacher is a constant factor. The children should realize that the freedom of the new order is theirs only if they use it wisely. They should feel that the teacher is always ready

to help them. When the work is well carried out, one of the chief successes is that the children come to the teacher for help and suggestions rather than wait for him to start each new discussion or to " call " upon them before they recite.

It is not profitable to use the so-called socialized organization in every recitation and all the subjects. Its limit is reached whenever the social element ceases to be a stimulus for greater effort on the part of each individual or when coöperation is not as profitable as individual effort. With these two principles in mind it can readily be seen that well-designed socialization in a few subjects, focused upon vital elements, will be more profitable than an attempt to bring the social motive into everything. Time must be given the individual to study and to become independent. As in any other social work, interest, charm, and effectiveness depend upon wise application of the social motive to vital issues at the right time.

ILLUSTRATIONS: *Sixth-grade history.*

The Colonial Period. The teacher allowed the children to discuss each new lesson and choose the topics for the next day. However, she saw that the discussion was limited to proper topics and that only those which were worth while were voted upon. Being allowed to select their own work proved a decided stimulus to begin with. Often the discussion of the assignment made a very valuable and vital part of the recitation.

In addition to a few general topics, the assignment usually consisted of special topics upon which different individuals

volunteered to report to the class. Each of these reports was socially valuable because the child who made it brought information which the group desired and made a distinct contribution. The class had not prepared a lesson on the special topic and, therefore, did not know what the one who made the report was to tell. It is important that subjects that are both vital historically and interesting to the class be selected for these reports.

Each report was followed by a discussion in which any child might take part.

Fifth-grade geography.

The teacher announced that the children might conduct their own recitations. The plan decided upon was as follows: The teacher and the class would choose a number of topics for the next day. The teacher called upon the first child. After his recitation anyone who had anything to add would stand. The last one to speak called upon another child to discuss another topic. The teacher kept in the background but was responsible. She saw that no "cliques" were formed, that the discussions were kept on a high plane, and that the slow children were given due part.

Eighth-grade literature.

The class was reading Ivanhoe and formed a Walter Scott Club. At each recitation the officers presided. They read and discussed a regular portion of Ivanhoe as a regular part of each meeting. This was followed by stories from the life of Scott and the time in which he lived. Other books written by Scott were read and reported by different members of the Club. This class was conducted by an inexperienced practice teacher. The high interest, ground covered, and the penetration revealed in the discussions could not have been equaled in an ordinary question and answer recitation. The teacher

found it necessary to know much more about Scott and his writings than she would have needed to conduct ordinary recitations. The members of the Walter Scott Club were well informed upon their "favorite" author before the end of the term.

Illustrations of Socialization Involving Competition

Seventh-grade history.

In the assignment the teacher asked the class to discuss the problem or problems they should consider for the next day. Each child was asked to look over the headings of the text and to contribute whatever he could to the discussion. They were at the beginning of the Civil War and the problem or project that was finally decided upon for investigation and discussion for the next day was "The comparative strength of the two sections." With the help of the teacher they divided the larger topic into five divisions. There were five rows and each row was to be responsible for a division. The divisions of the topic were:

Comparative populations, including numbers, capacity for war, etc.

Agricultural resources, the crops of the two sections, their values, etc.

Locations of the chief cities and the plans of the opposing forces.

The arguments with which each side defended its ideas; their beliefs in success.

The problems confronting the government as compared with those of to-day.

At the end of the discussion the room was allowed to vote on which row did the best.

This type of lesson was taken up each Friday during a term. The assignment was made a week ahead and the different

rows employed their spare time in looking up material. The rows were scored 1, 2, 3, 4, 5, the scoring being done by secret ballot following a ten-minute discussion in which different members of the class suggested scores for the different rows by noting the vitality of their discussions. This ten minutes became a very interesting and profitable part of the work. A sixty-minute hour was given over to this work and each row was allowed ten minutes. The assignment was usually a vital issue which had been already taken up. It served as a review as well as a special means of emphasizing the more valuable parts of the work.

Eighth-grade history.

Two leaders were elected by the class. They chose sides. Each Friday they took opposite sides of the room and the members of each side asked those of the other side questions from the work of the week. They regarded themselves as camps of opposing armies, and when a question was asked which the opponent could not answer, he was "killed" for that "battle." The two sides organized and "trained" for each battle. Every soldier was considered to have the same value as every other. Thus, the problem became one of having everyone prepared.

The children who took part in this work soon developed a high interest. The teacher instructed them to ask vital questions which would require organization, rather than catch questions. When a catch question was asked, the child who was called upon could appeal to the teacher or "umpire," and if the teacher decided that it was unimportant and purely mechanical, the question was considered answered.

This last feature was the part that made the work vital in developing the subject matter and the abilities of the children. Too often this kind of work is merely a contest on a low plane, because the teacher does nothing to elevate it.

More complex schemes of socialization in which an entire unit of subject matter is organized and worked out by a class may often be employed to advantage. In civics, for example, the class studies the home city by organizing as a city government. They hold an election and elect, according to regular form, a mayor and council; these appoint the remaining city officers as police force, water inspectors, firemen (or fire chief). Each lesson is a meeting of this government in which the different needs of the city and the duties of the different officers are discussed. If properly managed, such a scheme will lead to wide reading and investigation. A great deal of variety and vital subject matter may be added by allowing recalls, impeachments, and attacks upon different officers for not doing their duties. In all such cases the teacher should require that the legal requirements be met with. This furnishes valuable subject matter that is functional as well as requiring worthy effort on the part of the children. The teacher usually finds that he must work hard to keep up with a live class the first time he tries such an organization.

In arithmetic a class may study stocks and bonds by organizing as a corporation. In order to operate they become acquainted with the issuing of stock and its different forms of sale. They learn to solve problems involving the different features of the corporation. In an oil region they may incorporate as an oil company. In another place they may organize as a banking corporation

or as a trust. When properly managed, such work furnishes splendid educational opportunities.

Selecting Subject Matter of Social Value

Relating the Course of Study to the Community. One of the best ways of vitalizing an ordinary course of study is to localize it. When properly socialized by being related to the social life of the special communities in which it is used, a course of study loses most of its deadness. In all the subjects of the elementary school curriculum it is possible to find connections with the life of the community.

In arithmetic the usual course of study demands that the children master to a certain extent the four fundamentals, common fractions, decimals, percentage, interest, and simple mensuration. In every community there is constant use being made of the essential elements of these topics. In the buying and selling transactions of the local hardware, dry goods, and grocery stores, necessity for the use of all of them is found almost daily. The local banks, the county and city offices, and the local contractors, mechanics, and carpenters are constantly meeting all the different types of examples that are given in a modern textbook.

The teacher can make capital of this social situation by using now and then some of these life problems. A local bank, the clerks of a store, or local mechanics can furnish, after a few days' observation, hundreds of such problems. These are often made much more interest-

SOCIALIZING THE CIVIL WAR BY CONNECTING IT WITH THE HOME COMMUNITY

ing and vital by selecting special problems which have caused trouble for persons in the community. Such a scheme has been used with success in some of the elementary schools of Seattle, Washington. The following problems are typical:

(1) Mr. (name of local merchant) sold the following bills of groceries last week. The teacher had the actual bills from which she dictated the exercise in addition. In the modern file system the bills are usually destroyed after a customer pays them, and a merchant will usually be glad to save a set of them for a teacher.

(2) At the First National Bank the following notes were due yesterday. A half dozen such notes are assigned for the day's lesson in interest. A banker who knows the teacher is usually willing to tabulate a few such transactions without giving the names of the borrowers.

(3) Mr. (local contractor) is building a house at 3547 17th Ave. The following are some of the problems he must solve. The actual problems are assigned for a lesson in mensuration.

Problems involving special social situations:

(1) Miss (local clerk) during the last month found that persons in this locality often know little about transactions involving fractions. In selling dry goods she found that customers demanded the wrong change in the following problems. Can you solve them?

Any clerk can soon collect a good list of interesting and often humorous incidents of this type.

(2) At the . . . grocery store the following mistakes in making change were made by customers last week. Can you correct them?

(3) Local automobile firm sold eight cars on the installment plan last week. They were sold under the following

contracts, involving payment as stated. What is the interest in each case? What is the best way of calculating this interest?

(4) A few years ago Mr. (local person) bought a house on the installment plan and was told that he was to pay seven per cent interest. After he had signed his contract, the company inserted eight per cent instead of seven per cent. He paid $15.00 per month until he had settled his debt of $1000.00. How much more did he have to pay than he had expected to?

Such problems are vital only if not used to excess. There is no question about their good influence in making the course of study appear more alive and useful to the children if they are wisely chosen and used at psychological moments. Work of this type will place the arithmetic upon a higher plane, bring the children into contact with its values, and make it a more interesting study.[1]

In geography local conditions should constantly be used for comparisons. Every new step that is taken in this subject should be related to the community in which the children live. The following questions on France illustrate this:

An introductory lesson.

In what direction and approximately how far is France from *here?*

How large is France when compared to the U. S.? Our own state?

How is our government like that of France? How different?

[1] It should not go so far as to attempt to train children in all the mathematics of the different occupations.

Name a number of articles in this community that came from France.

How many of you are of French descent? Do you know anyone in this community who is French? Anyone who came directly from France?

Are there any products of this community that are likely to be shipped to France?

If you read the daily papers, please note anything you see about France in them and mention it in class.

Assignment for to-morrow: A woman who used to live in France and who is now a citizen of our town will talk to you about France. Be ready to ask her several questions. You will be judged by the intelligence and ability you show in the questions you ask.

These questions are a few of a large number that were used to relate the geography of France to that of the local community. In the introductory lesson the children were, of course, unable to answer them in a very satisfactory manner. However, these questions and others like them made up a constant background for every lesson, and before the unit of subject matter was completed the children knew France, not as a distant country soon to be forgotten, but through living evidence in their own community and in relation to things going on around them every day. They read their text and reference books with specific purposes, and the subject matter was mastered in a way that could not have been brought about by ordinary assignments and discussions.

In written and oral English the community can be drawn upon for the subject matter expressed. When a

child has learned to see, hear, and feel the life and objects of his own community and is able to express himself effectively in regard to them, his education in English is near completion. To be able to understand and express in clear and interesting language that which he observes is the goal of all the child's efforts in the subject of English.

History must be vitalized in the same way. No matter what history the course of study calls for, it will be appreciated more and remembered better if related to and compared with events that are going on at the present time, and which affect the community in which the children live. The following questions on the Revolutionary War, for example, may serve as a background and a constant aid in the study of this phase of American History:

How large was our country at that time compared to its present size? In population? In territory? In wealth?

How much longer did it take to cross the Atlantic Ocean than now? How did this affect the war?

What means of transportation did they have? How much longer did it take to travel fifty miles than it does now?

How was clothing supplied to the soldiers at that time? How is it supplied now?

If England had won the war, what difference would it make to us now? (This question may be made very important if the teachers care to develop it in detail.)

What do we owe to-day to the ideals of our forefathers who waged the Revolutionary War and established the principles of our government? (A question well worth working out at

the expense of many of the detailed accounts of battles and campaigns.)

How does the present British nation differ from the Britain which fought us at that time? (In order to form the proper attitude toward present British relations with us this is an important question.)

Nature study, civics, and hygiene are three subjects which may be made to take a regular part in the child's social life. He must learn to control and appreciate the nature that is around him. He must learn of the government of his community and constantly feel that everything else he learns about government should be applied to his own social existence. He must learn of health in order to apply it to his own living; to keep his home clean and his body healthy in order to be a better citizen and not a menace to others.

Closer Relation between the Home and the School

A Plan to Care for Visitors. Both the school and the home are busy institutions. There is no doubt that principal and teachers have a great deal to do. Also no one of intelligence questions the many duties and burdens of fathers and mothers. The school must face the problem of linking these two institutions together for mutual advantage. Every school should have its organization to meet and care for visitors. By merely telling the parents that he is glad to see them and would like to have them visit as often as possible, a teacher is not likely to enlarge his list of visitors. There must be

some definite plan for taking care of visitors. The following incident will illustrate this:

A certain school was trying to become a larger factor in the community and to be as helpful as possible to parents. The principal was especially eager that parents visit the school so that he could learn of their ideals for their children and at the same time drop hints which might bring about better home opportunities. A mother visited his school at a time when the principal was busy. He did not know she was there. It being her first visit, she did not know what to do. The vice-principal and several teachers passed her as she was sitting in an anteroom, but they seemed too busy to notice her. She waited a couple of hours. Then, feeling very much out of place, she decided to go home. It is needless to say that she never returned.

In a large school this problem is often solved by instructing those who frequent the office to be sure to approach any person who enters and inquire what he has come for. In case the visitor is a parent of one of the children in the school, all ordinary office work should be suspended for the moment and the greatest courtesy shown him. In a smaller school the children should be instructed to be courteous and helpful to all visitors, so that if a child should meet a father or mother in the hall, he should take the time and the pains to assist the visitor in the same way that he would show hospitality in his own home.

A teacher should feel that whenever a parent visits

he is under obligation to the same extent that he is to the child. He has an opportunity to help the child much more than he can by ordinary recitation and assignments if he will make the parent sympathize with and understand the needs of the child. He can also learn things about the parent and home life which will make his instruction more effective. He should leave no stone unturned to make his visitor feel welcome, profit by his visit, and resolve to come again.

Visiting Days. Visiting school may be made a social occasion just as are visiting the circus or the moving picture. If a visiting day is announced and social means are used to get the parents to come on this day, many of them will start the habit of coming to the school. They will talk about their visits to other parents and an attitude of sympathy toward what is going on there may be developed. Of course, the attitude that the parents take towards the school will depend upon what they see there, how it is interpreted to them, and how they are treated. To manage a visiting day properly requires a great deal of intuition, common sense, and planning. There must be both special and regular work. At least one or two regular lessons should be given. Then there should always be special programs. A contest between the different rooms to see which one can get the largest percentage of mothers to attend will add interest and get results. The children should be stimulated to get their mothers to attend. It is often worth while to send an invitation to each mother.

In initiating such a plan a school should not expect any large success at first. The visiting day must be made a regular feature of the school work just as much as are the report cards. If a mother can be induced to come to the school, the results are likely to be larger in the way of coöperation than the report card will obtain.

Parent associations are also vital and valuable features of coöperation when wisely managed. Their proper management depends upon local conditions.

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